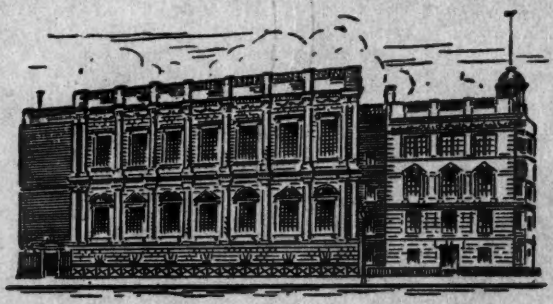
Vol. LXXVII. NOVEMBER, 1932 No. 508

# JOURNAL



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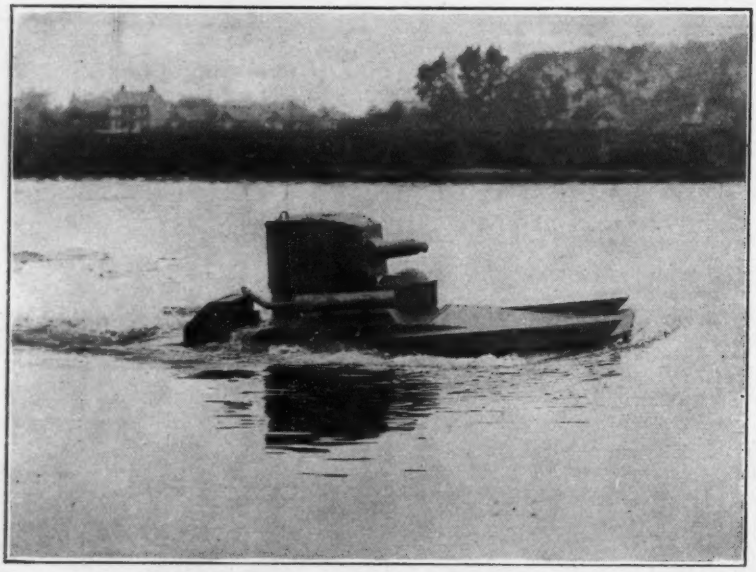

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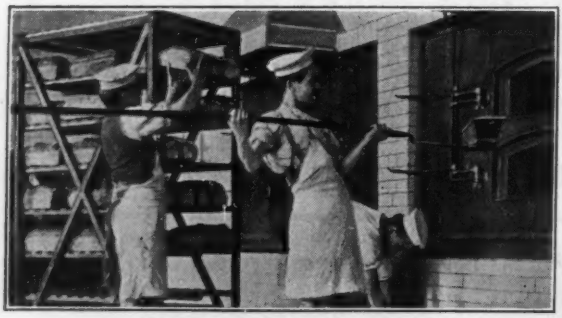

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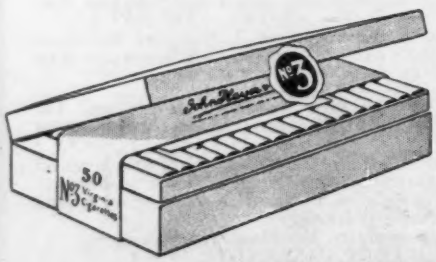


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The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

## THE JOURNAL.

The R.U.S.I. JOURNAL is published quarterly and sent post free to Members in any part of the world.

## THE MUSEUM.

Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s. ; Saturday after Noon, 6d.

# SECRETARY'S NOTES

*November*, 1932.

## MEMBERSHIP

### Annual Members

From now until the end of 1932, officers can join the Institution either by paying £1 5s. od. as their subscription for 1932 and without entrance fee; or as 1933 Members by paying £2 6s. od., being the £1 1s. od. entrance fee, which is being reimposed for that and subsequent years, and £1 5s. od. annual subscription.

In the case of the former, Members are entitled to the four issues of the JOURNAL for 1932, but pay their next annual subscription on 1st January, 1933.

In the case of the latter, Members secure the full benefits of membership as from 1st October of the current year and are not called upon to pay another annual subscription until 1st January, 1934.

### Junior Officers

There is no change in the rules governing the admission of officers with less than three years' commissioned service. These officers are not and will not be required to pay an entrance fee, but their Membership dates from 1st January of the year in which they join.

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### Portrait of His Majesty The King

The portrait of His Majesty The King which has been painted for the Institution by Sir Arthur Cope, K.C.V.O., R.A., to commemorate the Centenary has been completed and hung in the main Entrance Hall.

### The late Field Marshal Lord Methuen

The death of Field Marshal Lord Methuen, G.C.B., G.C.M.G., D.C.L., LL.D., has deprived the Institution of one of its oldest and most distinguished Members. He joined in 1865. From 1894 to 1905 he served as a member of the Council, and was their Chairman in 1896, 1898 and 1903. From 1911 to 1928 he was a Vice-President of the Institution.

### The late Colonel H. C. Wylly

The Institution has suffered the loss of a much respected Member and one who contributed greatly to the advancement of its work by the death of Colonel H. C. Wylly, C.B. Colonel Wylly joined the Institution in 1904 and from 1913 to 1923 edited this Journal. He will long be remembered for his many contributions to military history, the value of which was specially recognised by the Council in awarding him the Chesney Medal for 1929.

## Additional Lectures

The following additional lectures have been arranged :—

*Wednesday, 18th January* :—" The Statute of Westminster " by Mr. R. P. Mahaffy. Lord Blanesburgh, G.B.E., D.C.L., LL.D., in the chair.

*Wednesday, 15th February* :—" The Training of the Army for War," by Brigadier A. P. Wavell, C.M.G., M.C. ; General Sir Charles Harington, G.B.E., K.C.B., D.S.O., in the chair.

*Wednesday, 15th March* :—" The Russian Five Year Plan," by Signor Carlo Scarfoglio ; Major-General Sir Alfred Knox, K.C.B., C.M.G., M.P., in the chair.

A further military lecture is also being arranged.

## New Members

The following officers have joined the Institution during the months of August, September and October :—

ROYAL NAVY.

Lieutenant F. J. Cartwright, R.N.
Lieutenant R. G. Mascall, R.M.
Sub-Lieutenant H. H. R. Moore, R.N.
Commander R. Grenfell, R.N.
Lieutenant J. C. Stopford, R.N.
Commander C. A. L. Mansergh, D.S.C., R.N.
Sub-Lieutenant M. G. C. Warmington, R.N.
Midshipman R. F. Phillimore, R.N.
Lieutenant S. D. Roper, R.N.
Lieutenant J. Pringle, R.N.
Midshipman F. St. P. Woodhouse, R.N.
Commander H. N. Barnes, R.N.
Commander F. Ratsey, R.N.
Lieutenant-Commander J. H. Huntley, R.N.
Vice-Admiral R. M. Burmester, C.B., C.M.G.
Lieutenant V. C. F. Clark, R.N.
Lieutenant J. H. McI. Malcolm, R.N.
Mr. F. H. Mason (late Lieutenant), R.N.V.R.
Lieutenant F. H. Dunlop, R.N.
Commander G. A. B. Hawkins, M.V.O., D.S.C., R.N.
Lieutenant-Commander R. P. Clarke, R.N.

ARMY.

Lieutenant D. M. B. Vauqulin, 2/11th Sikh Regiment.
Lieutenant E. L. Fanshawe, R.H.A.
Captain J. E. Gordon, Probyn's Horse, I.A.
Captain G. A. Fenton, R.A.
2nd Lieutenant M. G. H. Henley, The King's Regiment.
2nd Lieutenant K. T. Darling, The Royal Fusiliers.
Lieutenant R. O. V. Thompson, 2nd Royal Sussex Regiment.
Captain R. A. A. Wimberley, 9th Jat Regiment.
Lieutenant W. P. E. Walton, 1st North Staffs Regiment.
Lieutenant B. M. Hoctor-Duncan, R.A.S.C.
Lieutenant G. E. R. Bastin, R.A.

Captain R. A. Riddell, The Queen's Own Royal West Kent Regiment.
2nd Lieutenant J. B. Ashworth, The Royal Sussex Regiment.
Lieutenant W. D. Horniman, Royal Corps of Signals.
Major F. G. Hancocks, M.C., London Rifle Brigade.
Lieutenant C. P. R. Johnston, Seaforth Highlanders.
Captain L. O. Clark, R.E.
Lieutenant C. R. T. Cumberledge, The Duke of Wellington's Regiment.
Captain R. A. N. Davidson, 4th P.W.O. Gurkha Rifles.
Lieutenant-Colonel D. W. Reynolds, C.B.E., D.S.O., The York & Lancaster Regiment.
Captain P. F. Foley, R.E.
2nd Lieutenant J. R. Armstrong-MacDonnell, The East Surrey Regiment.
Lieutenant J. D. P. Chapman, R.E.
Major E. A. Glennie, D.S.O., R.E.
Lieutenant A. D. Mackintosh, The Royal Scots.
Lieutenant F. A. H. Magee, The East Surrey Regiment.
Lieutenant C. W. Cronin, R.E. (T).
Captain D. A. F. Home, Coldstream Guards.
Lieutenant W. N. White-Thomson, The Royal Fusiliers.
Major-General J. C. Harding Newman, C.B., C.M.G.
Lieutenant B. E. L. Burton, The Queen's Royal Regiment.
Lieutenant H. C. F. V. Dunbar, Royal Tank Corps.
Lieutenant F. A. Smith, The Royal Berkshire Regiment.
Lieutenant L. E. Bourke, R.A.
Major C. H. D. Bonnett, O.B.E., 1st Bn. City of London Regiment.
Major-General Sir Edward Chaytor, K.C.M.G., K.C.V.O., C.B., late New Zealand Forces.
Captain H. P. P. Robertson, The Buffs.
2nd Lieutenant J. P. Moore, The Cheshire Regiment.
Major R. F. W. Ashworth, late 13th Hussars.
Lieutenant-Colonel A. T. Miller, M.C., K.S.L.I.
Major D. N. Morgan, M.C., R.A.
Lieutenant K. Walker, Royal Tank Corps.
Captain T. Woodcock, The Hyderabad Regiment.
2nd Lieutenant J. C. Stewart Jonas, The York & Lancaster Regiment.
2nd Lieutenant F. H. Bowen, The Lancashire Fusiliers.
Captain E. B. Thornhill, M.C., R.A.
Colonel C. W. Frizell, D.S.O., M.C.
Captain W. V. Crapp, 3rd Bn. 17th Dogra Regiment.
2nd Lieutenant E. H. I. Webber, The Devonshire Regiment, Supplementary Reserve.
Captain G. P. Walsh, R.A.
Captain H. B. Norcott, The Rifle Brigade.
Captain G. A. V. Keays, The Lincolnshire Regiment.
Colonel W. Corrie-Tonge, D.S.O., late The Norfolk Regiment.
2nd Lieutenant K. S. Rix Hill, R.A.
2nd Lieutenant S. P. Fearon, 5/14th Punjab Regiment.
2nd Lieutenant The Lord Sudeley, Royal Horse Guards.
Lieutenant G. I. Burgess Winn, Royal Signals.
Lieutenant F. W. Brodie Good, Royal Tank Corps.
Captain G. Parkes, Royal Tank Corps.
2nd Lieutenant The Hon. S. C. J. Fraser, Master of Lovat, Scots Guards.

2nd Lieutenant R. A. Orr-Ewing, Scots Guards.
2nd Lieutenant R. C. Petre, Scots Guards.
2nd Lieutenant O. G. E. Roberts, Scots Guards.
2nd Lieutenant G. C. Rush, Scots Guards.
2nd Lieutenant W. J. Stirling, Scots Guards.
2nd Lieutenant H. D. Tweedie, Scots Guards.
2nd Lieutenant D. S. Wedderburn, Scots Guards.
Captain L. J. L. Addison, I.A.S.C.
Major P. A. Hitchcock, O.B.E., M.C., Royal Signals.
2nd Lieutenant E. C. Stanton, King's Royal Rifle Corps.
Lieutenant J. A. Cameron, R.E.
Captain W. R. N. Hinde, 15/19th Hussars.
Captain G. B. J. Kellie, M.C., R.A.
Brigadier D. E. Robertson, C.B., D.S.O., A.D.C., I.A.
Lieutenant D. A. Seagrim, The Green Howards.
Lieutenant G. M. Warren, Royal Tank Corps.
Captain G. M. S. Webb, 5/2nd Punjab Regiment.
Lieutenant T. P. D. Scott, The Royal Irish Fusiliers.
Lieutenant-Colonel W. T. H. Gregg, D.S.O., The Royal Irish Fusiliers.
Captain R. O. Skeggs, M.C., 6th Rifle Brigade.
Major D. Portway, M.A., Cambridge University O.T.C.
Captain F. J. Walsh, I.A.S.C.
Captain W. D. H. C. Forbes, Coldstream Guards.
Captain G. H. Raimes, Q.O. Yorkshire Dragoons.
2nd Lieutenant J. D. C. Brownlow, Grenadier Guards.
2nd Lieutenant P. W. P. Green, The Northamptonshire Regiment.
Captain Falconer Craig, O.B.E., M.C., late 3rd Hussars.
Brigadier R. H. Anderson, I.A.
Lieutenant H. R. R. Conder, The Norfolk Regiment.
Captain F. V. Oborne, The Royal Sussex Regiment.
Captain N. F. Penruddocke, R.A.S.C.
Lieutenant-Colonel W. G. Wolrige-Gordon, late Black Watch.
Major W. Wilberforce, D.S.O., M.C., Royal Ulster Rifles.
Captain F. V. L. Dundas, The King's Royal Rifle Corps.
Lieutenant A. J. H. Masters, Royal Signals.
Brigadier-General G. M. Bullen-Smith, C.M.G., D.S.O.
Captain C. R. B. Knight, late The Buffs.
Major H. F. Wailes, The East Yorkshire Regiment.
Captain A. Galloway, M.C., The Cameronians.
Lieutenant-Colonel A. V. Gompertz, M.C., R.E.
Captain F. E. B. Girling, M.C., The Queen's Royal Regiment.
Major J. M. Aiton, 62nd (N.M.) Field Brigade, R.A.
Lieutenant C. R. Buchanan, The Royal Scots Fusiliers.
Lieutenant H. C. Bazeley, R.A.
Lieutenant H. D. Dook, The Manchester Regiment.
Lieutenant J. M. Fearon, The Green Howards.
Lieutenant E. M. Hickey, The Manchester Regiment.
Captain W. Macfarlane, The Seaforth Highlanders.
Lieutenant G. P. Murray, The Seaforth Highlanders.
Lieutenant J. C. C. Richardson, The Norfolk Regiment.
Lieutenant E. D. G. Strong, The Wiltshire Regiment.

ROYAL AIR FORCE.

Squadron Leader F. J. W. Mellersh, A.F.C., R.A.F.
Squadron Leader H. V. Rowley, R.A.F.
Flying Officer G. D. Emms, R.A.F.
Flying Officer D. W. Lane, R.A.F.
Flight Lieutenant F. S. Hodder, R.A.F.
Flight Lieutenant R. H. S. Spaight, R.A.F.
Flight Lieutenant J. W. F. Merer, R.A.F.
Flight Lieutenant F. W. Long, R.A.F.
Flight Lieutenant J. R. Jones, R.A.F.
Flight Lieutenant L. C. Bennett, R.A.F.

## The United Service Institution of New South Wales

By courtesy of Amalgamated Wireless (Australasia), Ltd., the following messages were exchanged between this Institution and members of the United Service Institution of New South Wales on a tour of inspection in that country :—

"Chairman, Council and Members of the Royal United Service Institution, London, welcome the opportunity offered by the Amalgamated Wireless Australasia, Ltd., to send greetings to the President and Members of the United Service Institution of New South Wales."

Reply :—"President and Members offer warmest thanks for your message. We are proud of our connection with the parent Institution. We consider ourselves the eldest and most virile son now in our forty-fifth year and still going strong."

## Gold Medal Essay Competition (Air), 1932

The following Essays have been received :—

"There's but the twinkling of a star; between a man of peace and war."
"To be Mistress of the Air."

## Gold Medal Essay Subject (Military), 1933

The following is the subject which has been selected :—

"Assuming that it may be necessary in war to employ part, or all of the Territorial Army overseas so as to produce within the shortest time a field army fully trained and equipped, and organized to include the necessary non-divisional troops; are there any changes required in the present peace time organization and establishments of the Territorial Army to meet these requirements."

A leaflet giving the rules governing this competition is enclosed in this JOURNAL; a copy can be forwarded on application to the Secretary.

## JOURNAL

### Copies of the Frontispieces

A limited number of copies of the coloured Frontispieces, published in recent numbers of the JOURNAL, are available for sale and can be supplied, post free, for 6d. each.

## LIBRARY

### Rules Governing Return of Books

The attention of Members is invited to the following Regulations governing the retention and return of books :—

(1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.

(2) In the United Kingdom.—Books must normally be returned within one month of the date of issue ; but the Librarian is authorised to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.

(3) Stations Abroad.—When books are sent to Members abroad the same rules apply as for the United Kingdom, except that " the date of receipt " is substituted for " the date of issue."

**N.B.—IN VIEW OF THE INCREASING DEMAND FOR BOOKS FROM THE LENDING LIBRARY, IT IS ESSENTIAL IN THEIR OWN INTERESTS THAT MEMBERS SHOULD ADHERE STRICTLY TO THE RULES GOVERNING THE RETURN OF BOOKS. FAILURE TO DO SO IS CAUSING MUCH INCONVENIENCE, AND INVOLVING THE INSTITUTION IN UNNECESSARY EXPENSE AND CLERICAL LABOUR.**

## MUSEUM

### Special Exhibitions

The Special Exhibition of Ship Models depicting the Spanish Armada being attacked by fireships is being retained for the present.

A Collection of Nelson Relics has been organized and will be on show until after the Christmas holidays. The collection includes a number of very valuable and interesting relics kindly lent by Lord Nelson, The Rev. Hugh Nelson-Ward and the Monmouth Borough Council. A fine model of H.M.S. " Victory " as she was at Trafalgar has also been lent by the Portsmouth and Southsea Publicity Committee.

### Royal Air Force Section

New additions have been made to this Section in the shape of scale models of aeroplanes kindly presented by the H. G. Hawker Engineering Co. and The Bristol Aeroplane Co., Ltd.

### Collection of Medals

The Institution having had to surrender the Cheylesmore Collection of Medals at the request of the Trustees, the Council are desirous of forming a new collection which will be a permanent feature of the Museum. The Institution already possesses a large and varied collection of medals which have been grouped together, but offers of additions to the collection will be most welcome. Details of such offers should, however, be communicated to the Curator before medals are sent.

## Gift of Military Uniforms

The Museum has received a notable addition to the Military Section by the gift of a number of valuable military uniforms from Major N. H. C. Dickinson. It is also indebted to the same donor for numerous additions to the collection of badges and buttons. Members who can make further contributions to the latter collection are requested to communicate particulars to the Curator.

## Additions

PERMANENT.

(8502) Light Dragoon Sword, 1798-1820.—Presented by W. G. Nash, Esq.

(8503) Highland Light Infantry Shako, 1881.—Presented by Captain H. M. McCance.

(8504) Two medallions struck to commemorate the 10th Anniversary of the Armistice, 11th November, 1918.—Presented by Colonel Sir R. A. Johnson.

(8505) China plate, as used in the Navy about 1840.—Presented by The Rev. H. R. Huband.

(8506) Medals and Decorations of Lieutenant-General Sir E. Alderson and his five hunting horns. Two Crimean medals of Colonel Alderson.—Presented by Lady Alderson.

(8507) Print of Lord Roberts entering Pretoria.—Presented by Lady Alderson.

(8508) Print of the action of El Gubat, with key.—Presented by Lady Alderson.

(8509) Austrian pin-fire Revolver, period about 1860.—Presented by C. Q. Becky.

(8510) Oil Painting of His Majesty King George V, by Sir Arthur Cope, K.C.V.O., R.A.—Purchased (Centenary Fund).

(8511) Russian three-line Nagant Revolver, service pattern. Made at the Peter the Great Government Arms Factory at Tula during the Great War.—Presented by Lieutenant-Colonel L. V. S. Blacker.

(8512) Shako of the 91st Highlanders, worn up to 1881.—Presented by Colonel S. Paterson.

(8513) Collection of Badges.—Presented by Major N. H. C. Dickinson.

(8514) Full dress and Mess uniform, Indian Commissariat about 1870.—Presented by Lieutenant S. A. H. Kirkby.

(8515) German Service Revolver, 1870.—Presented by Captain J. C. Ledward.

(8516) Walking stick of olive wood cut from the battlefield of Inkerman.—Presented by H. H. Harrod, Esq.

(8517) Officer's helmet, Royal Field Artillery, 1914.—Presented by Colonel C. H. W. Owen.

(8518) Collection of Indian Army cap and shoulder badges.—Presented by Captain R. Gordon.

(8519) Commodore's Blue Pendant given to Captain H. Edgell, C.B., R.N., on his appointment as Commodore of the East India and China Station in 1858.—Presented by Captain J. A. Edgell, R.N.

(8520) Pouch of the Montgomeryshire Yeomanry Cavalry.—Presented by The Marquess of Cambridge.

(8521) Model of a B.L. 12-inch Mark V Howitzer on railway mounting.—Made and presented by J. Mendez.

(8522) Model of a Hawker " Fury " single-seater interceptor fighter.—Presented by The H. G. Hawker Engineering Co.

(8523) Ornamental top of the Mahdi's banner, picked up on the battlefield of Tel-el-Kebir.—Presented by Colonel Tuckey.

(8524) Drummer's coatee of the 1st or Grenadier Regiment of Foot Guards, 1830-55, and pouch of same date.

(8525) Badge of the Imperial Military Railways, South Africa (Boer War).—Presented by F. C. Levander.

(8526) Badge of the Cape Government Railways, South Africa (Boer War), which superseded 8525.—Presented by G. Sheppard, Library Clerk.

(8527-34) Collection of uniforms.—Presented by Major N. H. C. Dickinson.

(8535) Shoulder belt plate of a Sergeant, 85th (Rutlandshire) Foot, 1845.—Presented by Major N. H. C. Dickinson.

(8536) Collection of waist belt buckles.—Presented by Major N. H. C. Dickinson.

(8537) Collection of helmet and cap badges.—Presented by Major N. H. C. Dickinson.

(8538) Bit ornament, Mounted Services, 1896-7.—Presented by Major N. H. C. Dickinson.

(8539-41) Collection of uniforms.—Presented by Major N. H. C. Dickinson.

(8542) Collection of Infantry shoulder straps, 1881-1904.—Presented by Major N. H. C. Dickinson.

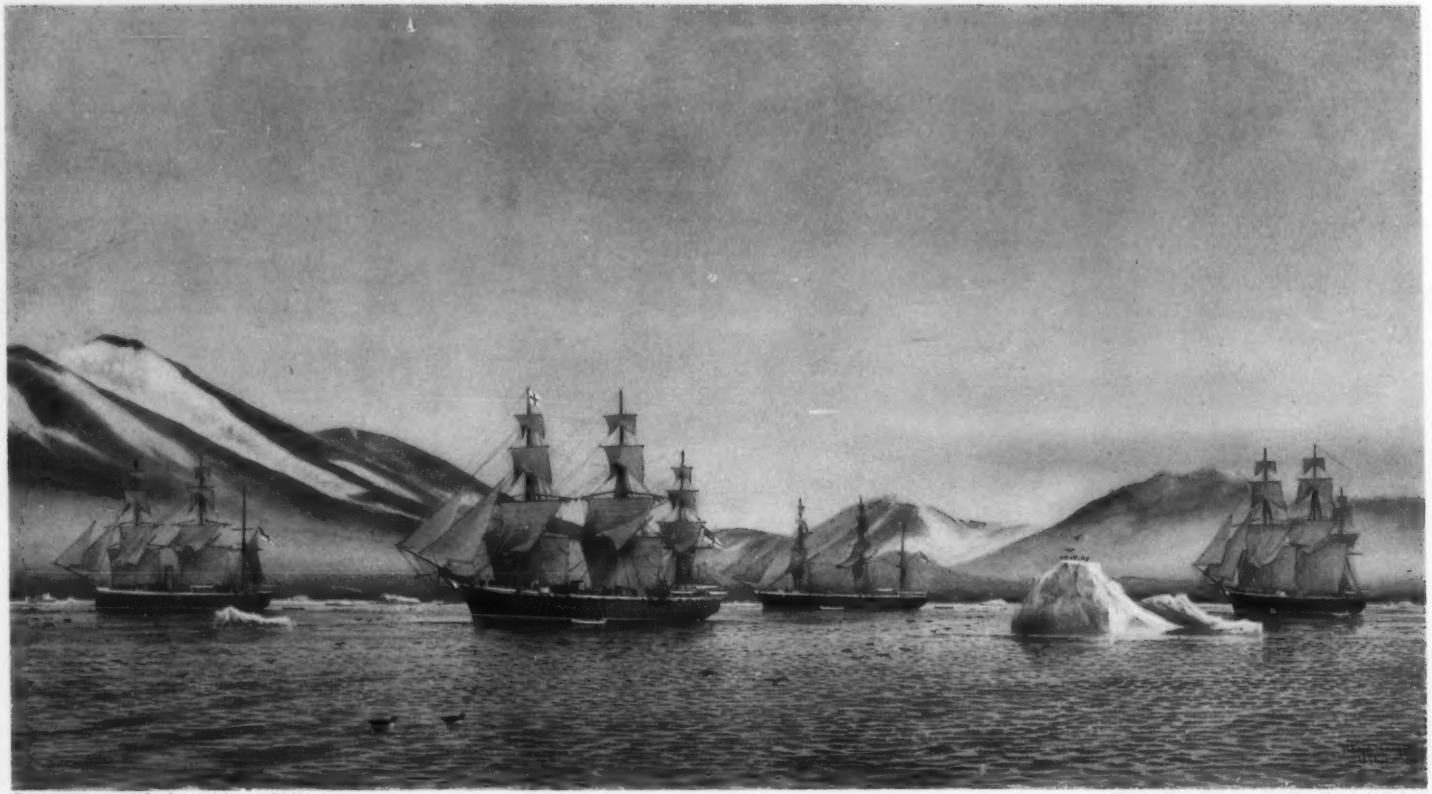
## Attendance

The amount taken for admission during the past quarter was :—

£226 11s. 0d. in August.
£172 4s. 6d. in September.
£139 8s. 6d. in October.

## Purchase Fund

This Fund has been opened to assist in the purchase of new exhibits. The Council hope that it will receive the support of Members interested in the Museum.



*By courtesy of Lady Atkinson-Willes.* *From the picture by W. Fred Mitchell*

**THE OLD TRAINING SQUADRON**

H. M. Ships " Active," " Calypso " " Volage " and " Ruby " under the command of Commodore G. L. Atkinson, at Spitzbergen — 29th July to 4th August 1895

# THE JOURNAL
OF THE
# Royal United Service Institution

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**[Authors alone are responsible for the contents of their respective Papers. All communications (except those for perusal by the Editor only) should be addressed to the Secretary, Royal United Service Institution.]**


## SAIL TRAINING FOR THE NAVY

By COMMANDER G. C. STEELE, V.C., R.N.

On Wednesday, 5th October, 1932, at 3 p.m.

ADMIRAL OF THE FLEET SIR ROGER J. B. KEYES, Bt., G.C.B., K.C.V.O., C.M.G., D.S.O., in the Chair.

THE CHAIRMAN in introducing the Lecturer said that, at the outbreak of the War, Commander Steele was a Sub-Lieutenant in the Royal Naval Reserve. He had volunteered for, and been taken into the submarine service, and this was the beginning of a very distinguished career. He served in the "E.22" in the Heligoland Bight, he was an officer in the first "Q" boat campaign, and in August, 1915, was mentioned in despatches for an action which resulted in the sinking of an enemy submarine. A few days later he was given a commission in the Royal Navy for distinguished services in action, being the first officer to be transferred from the Royal Naval Reserve to the Royal Navy during the War. He commanded "P.C.63," and the sloop "Cornflower." Subsequently he was awarded the Victoria Cross for his services in H.M. Coastal Boat 88. On that occasion he took command after the Commanding Officer had been killed, and torpedoed two Bolshevik battleships in Kronstadt Harbour. He now commands the Mercantile Marine training ship "Worcester."

### LECTURE.

#### EARLY NAVAL TRAINING

TRAINING and instruction, as we know them to-day, had no place in the Navy of old; officers and men went to sea and picked up their work as best they could. It was a hard school, consistent with the times, but it produced some of the finest seamen the world has ever known. In the middle of the XVIIth century officers entered

the Navy in an extraordinary fashion. Some of them came in with the "King's Letter," and were regarded as "volunteers by order," although we find them constantly referred to in the time of Charles II as "King's letter boys" because they came in by royal warrant. This system was introduced in 1676 with the object of inducing men of better quality "to breed up their younger sons to the art and practice of navigation," and was designed to encourage a class of young officer whom the King had already favoured. At first, the qualifying service for a Lieutenant was three years, of which one should have been passed as a Midshipman; but this period was subsequently doubled. In 1728 the "King's Letter" was abolished, the examination of applicants for naval service was taken over by the Navy Board, and a Naval Academy was instituted at Portsmouth. This system continued much the same until the College was closed in 1837. Nevertheless, singular practices continued. Even when entry was apparently regular it is evident that the examination was often of a very perfunctory character, while there were cases where qualifying "sea service" was sometimes credited to children ashore. Others joined at a very early age. Sir William Symonds was a Midshipman when he was only twelve years old, and a Captain's son was in action at the age of eight, although what part he took in it is not recorded. If some, indeed, came in with the "King's Letter," many more entered the Service as the "servants" of Admirals, Captains, Lieutenants, Pursers, and other officers. The man who wished his son to enter the Navy, placed him under the patronage of a friend in some authority afloat, and this friend would enter him upon the ship's books in the manner described: sometimes even, long before he left the nursery. The rating gave no indication whatever of social grade, and it is interesting to note that Sir Cloudesley Shovell, the Earl of Peterborough, Sir Edward Whitaker, and many other men of note came into the Service in this way.

The system continued until 1794. It unquestionably led to very grave abuse at times, but the practice of entering youths as "servants" became established, and was fully recognised. The last surviving officer so entered was the late Admiral of the Fleet, Sir Provo Parry Wallis. Nelson himself was an example of an apparently irregular entry. He joined the "Raisonnable" as a Midshipman at the age of twelve, then became a "Captain's servant," afterwards Coxswain, then a Midshipman again in the "Seahorse," and for three years, in the East Indies, he both worked aloft in the fore-top and walked the quarter-deck as an officer.

After the "servants" had been abolished, except as true domestics, by the regulation of 1794, we find boys entering the Navy as "first class volunteers." These, it would appear, were admitted without any

greater preliminary ordeal than that of jumping over a chair, working out some simple sums in the four rules of arithmetic, and writing an easy piece of dictation. Admiral Markham's entry into the Navy in 1844 serves as a good illustration. He was brought down to Portsmouth by his father and was told to report himself on board the " St. Vincent " lying at Spithead. He arrived on board, and having mentioned the object of his visit, was shown into an office on the upper deck where he found another youth who had come on board on a similar errand. There the much dreaded examination took place. They were told to sit down and write the Lord's Prayer. The papers, however, were taken away before they had completed their task and the two candidates were informed that they had passed and might consider themselves officers of the Royal Navy, and that they would receive their certificates in due course. Before they departed, however, a fat old doctor gave each a severe punch in the wind and asked if it hurt. On receiving a reply in the negative he informed the candidates that they had passed their medical test. It was a time when the elaborate system of competitive examinations and the complex machinery of modern education had not been created. In 1843, young officers entered for the first time as Naval Cadets, their training being conducted, side by side with that of bluejackets, in the " Illustrious." The training ship system began to develop in 1859, when the old " Britannia," Admiral Dundas's flag-ship at Sebastopol, was commissioned at Portsmouth as a school for newly entered Cadets. A couple of years later she was transferred to Portland. It was not until 1863 that the ship was taken to Dartmouth, where she soon showed signs of decay. She was replaced by the second " Britannia " in 1869.

The " Britannia " lasted until 1905 when she was replaced by the Royal Naval Colleges at Dartmouth and Osborne. As a Cadet ship, she always had a tender attached to her ; first the schooner " Wave," then the sloop " Racer," commanded for four years by the lecturer's father. After Cadets had passed out of the " Britannia " they entered a special Cadet training ship. In 1859 this was the " Bristol " ; later, in the seventies, the " Trafalgar " and " Ariadne " were both used for this service. In 1902 the " Isis " and shortly afterwards the " Aurora " took out fourth term Cadets for " blue water " cruises, and combined the work of tender and sea training ship. Next came the " Cornwall " and " Cumberland," which took Cadets for cruises lasting six months. They were engaged in this work until the outbreak of the Great War. The " Highflyer " was employed on similar work training Cadets of the Special Entry scheme.

An attempt was made to revert to this scheme after the War, but the vessel used, the battleship " Thunderer," was not of a very suitable

class. In 1924 the scheme was dropped altogether and Dartmouth Cadets entered the fleet directly on leaving the college. The monitor "Erebus" replaced the "Thunderer" and was used for training the Special Entry Cadets until relieved by the newly commissioned "Frobisher."

Let us now briefly review the seamen boys' past training. The first indication of systematic instruction appeared about 1850 when two hundred boys, called "Naval Apprentices," were sent for training to each of the harbour flagships at Portsmouth and Plymouth. But the duties of a flagship which was also a receiving ship constantly interfered with training, and the system could not be called effective. Following closely on the introduction of the "Britannia" for Cadets, special training ships were provided for seamen boys. Their institution was due largely to the personal efforts of the same Captain Robert Harris who was instrumental in starting the "Britannia" scheme.

The first boys' training ship appears to have been the "Impregnable" commissioned in 1858. About this time, too, Sir William Martin introduced training classes afloat. The "Impregnable" was soon joined by the "Implacable," both ships being stationed at Devonport. In 1866 the "St. Vincent" at Portsmouth, the "Ganges" at Chatham, and the "Boscawen" at Southampton were added to the list of ships employed on this service.

In 1886, training in the Navy was at the height of its efficiency, if the number of ships engaged on the work is any criterion. The harbour training ships had increased to six: the "Boscawen" at Portland, "Ganges" at Falmouth, "St. Vincent" at Portsmouth, and the "Impregnable" and "Lion" at Devonport. In addition there were the sea-going training brigs, "Seaflower," "Sealark," "Pilot," "Nautilus," "Martine" and "Liberty."

The boys spent twelve months in a harbour training ship and then six weeks in a brig; after that they were sent to the Training Squadron. A more complete training it would be hard to imagine.

It is the Training Squadron which has the greatest interest for us in this lecture, because it is possible that something approximating to it, both in number, and even in class of ship may be re-introduced to train the young officers and seamen of the present generation.

The old Training Squadron was formed in 1886 as a special squadron for the sole purpose of training. It replaced the Flying Squadron which had carried out long cruises and was regarded as suitable training ground. At first it consisted of the "Active," "Calypso," "Rover" and "Volage," steel or iron corvettes of 2,000 to 3,000 tons displacement.

The four ships carried about eleven hundred men for training, of which half were boys and half ordinary seamen. The average period of training was six months. This Squadron remained the same, but for a few replacements by ships of a similar class, until the outbreak of the Boer War in 1899, when the policy was adopted of having only fighting ships cruising the high seas, and a new Squadron was commissioned, consisting of the old cruisers " Hyacinth," " Juno," " Minerva " and " St. George." In 1902 the Training Squadron as such ceased to exist. The training brigs ran a little longer, but 1902 saw a great change in naval training. Machinery was the mode of the day, and no doubt a policy of mechanical training was then considered more progressive. It was something new and caught people's fancy. For officers a syllabus of mechanical training was introduced at the Naval Colleges. For men, the training brigs, and Training Squadron were replaced by a three months' mechanical course after passing out of the harbour training ships, followed by one month of instruction in heavy rigging ashore, and a course of gunnery in the old ironclad " Inconstant." After that the young seaman did six weeks sea training in the cruiser " Medusa."

Next we find the gradual disappearance of the harbour training ships. This was due more to their becoming worn out than to any deliberate change of policy towards the establishment of schools on shore ; although there was, perhaps, a mistaken idea that accommodation on shore was more healthy. The fallacy of this is apparent in the light of the record of the present Mercantile Marine training ship " Worcester," which for three years has not had a single case of infectious disease or serious illness amongst a complement of 170 cadets of ages from thirteen to seventeen. The old " Impregnable," the last of the harbour training ships to go, was paid off about three years ago. In about thirty-five years, therefore, the actual training ships of all classes in the Navy has been reduced from twenty-six to the harbour ship " Erebus " and a couple of sea-going sloop tenders.

## PRESENT TRAINING SCHEMES

For both officers and men there are now certain main and recognised channels of entry into the Royal Navy, and these channels supply the great bulk of the deck personnel. There are other means of entry, less important by reason of the smaller number of recruits they provide, but which, nevertheless, have a certain leavening effect upon the whole, and also have value in the fact that the standard of the common entrant may be compared to that produced by other schemes.

For officers, the recognized channel of entry is through the Royal Naval College, Dartmouth, and eighty-five per cent. of the total number

of Cadets entered in that way during 1931. The Cadet joins the College at the age of about 13½, and spends eleven terms, or just over four years, there—about two years in the Junior, and two years in the Senior House. On passing out he was, until now, appointed to a battleship, battle cruiser or cruiser in the fleet, where he served eight months as a Cadet. At the end of this time he was appointed a Midshipman. In future, sea-going time as a Cadet will be spent in the "Frobisher."

The seaman boy enters, either H.M.S. "Ganges," the Boys' Training Establishment at Shotley, or H.M.S. "St. Vincent," the Boys' Training Establishment at Gosport, at the age of about 16½. He spends about twelve months at one of these establishments, at the end of which time he is drafted to a fully commissioned ship where he spends another twelve months and is then rated an Ordinary Seaman.

The training of neither Cadet nor boy, however, ends at these stages, for Midshipmen are under daily instruction and Ordinary Seamen spend much of their time afloat in their training classes.

The outside schemes of entry for officers are the Special Entry, or public school Cadet scheme; the Direct Entry, or Cadetships allowed to the Mercantile Marine Officers' Training Establishments; and promotions from the lower deck. Under the first scheme a Cadet enters at about the age of 18, and up to the present time has been appointed to the harbour training ship "Erebus" at Devonport, for twelve months' training. At the age of 19 he was appointed a Midshipman and joined a sea-going ship.

The Direct Entry scheme allows a Cadet to sit for his examination at a somewhat earlier age, but his training is similar to the public school Cadet.

Youths promoted from the lower deck are given an officer's training on receiving their acting commission as Sub-Lieutenant; prior to that, of course, they have received the same training as other seamen boys.

Thirty-one officers were entered under these three schemes in 1931, but of this number only one came from the Mercantile Marine training ships "Worcester" or "Conway." I believe, however, that the scheme is under revision, and it is to be hoped that in future there may be more entries from this source.

Of seamen boys who have received their training at other establishments than the "Ganges" and "St. Vincent," 265, or 21 per cent. of the total entrants for 1931 came from the Royal Hospital School, Greenwich, two other shore training establishments, and the training ships, "Mercury," "Warspite," "Arethusa," "Exmouth" and "Indefatigable"; but of these the training ships only contributed 168, or 13 per cent. of the whole.

## PRESENT TRAINING AND SEA EXPERIENCE

A seaman is both trained and educated. In the latter respect he is well looked after. The Warrant rank of Schoolmaster has been introduced, educational tests have been instituted as a necessary preliminary to promotion, and school classes are held in every warship of any size. In addition, a theoretical groundwork on all technical subjects is given in the technical training establishments ashore.

By educating the seaman the naval authorities were, in the first place, only keeping pace with the general level of education outside the Service. Later, when manual labour was rapidly giving place to the use of machinery, it was only consistent with naval thoroughness that an elementary knowledge of the principles underlying mechanics should be taught. At the present time warfare has become so scientific that closer specialization and still greater scientific knowledge have become imperative. The net result is that the general education of the seaman has far outrun that of his contemporary on shore. No one disputes that this higher education is necessary if it is kept strictly within its limit of practical application; but there is a risk of overstepping the mark and extending the educational curriculum until the seaman is over-educated; in other words, he ceases to be a good hand. There are further risks of occupying too much of his crowded time in education, and of attaching too much importance to it. We see an example of this when a seaman, excellent at his work and with every qualification except that he has not passed the educational test, is passed over by his more studious but less useful comrade.

The case of the officer is very similar. In my view the passing of the "Britannia" as the Cadets' training ship was the step which upset the balance between education and training, and produced the present decided bias in favour of education. No one questioned that the shore College would give greater facilities for academic study, but many senior officers at the time disputed the wisdom of the step. I will take the opportunity of quoting a letter on the subject which appeared in the Press[1] as recently as last August. It ran, "When the Naval College at Dartmouth was substituted for the old "Britannia" the Naval Cadets lost something they could never acquire in a shore establishment. The Mercantile Marine never made that mistake; they still train the pick of their officers in the "Worcester" and "Conway," so that when Cadets do go to sea, they do so at the most impressionable age, fully imbued with the spirit of ship life. The sea spirit can never be imbued in the mind of the Dartmouth Cadet, despite the fact that the terms

[1] *Scotsman*, 20th August, 1932.

are called after historical naval names and the place of assembly is called the "Quarter Deck." In consequence these young gentlemen go to sea at the advanced age of 17½ with little or no experience of practical seamanship . . ."

What is true of the Cadets' training establishment applies equally to the seamen boys, for all the boys' naval training ships have followed the way of the old "Britannia," and shore training establishments have been substituted for them. I do not in any way wish to belittle the excellent organisation of these establishments, or the highly efficient manner in which they are run, but I do contend that from their very construction and environment the training they give is more of a military than of a naval character. It may be argued that shore establishments instil discipline and, in the case of Cadets, an officer spirit, but what better school could be found for that than a ship, with ship routine, ship life and ship discipline, in addition to which the lad acquires, unconsciously, day by day, the very real "ship sense" which is so much needed. If it is necessary to imbue him with a "parade ground" spirit this can be undertaken later during his technical course at the Gunnery School.

The first stage of the training of the officer and man is in a shore training establishment; now let us follow them a stage further. Up to the present time when all training is under revision, and a scheme has already been started for the improved training of the Naval Cadet, the early sea training of Cadet and boy has been very similar. Both classes on first going to sea have been appointed to fully commissioned big ships. Personally, I cannot conceive a worse system of training. Take the case of the Cadet. He finds himself in the gunroom of, say, a battleship. He is a very small and unimportant unit of a very large community. The very atmosphere of his surroundings in such a big ship can only be calculated to discourage and overwhelm him. He is not given a chance. The only effective method of learning practical work is to practise it yourself. Big ship organization, the exigencies of the Service, and naval discipline all work against any form of realistic instruction being carried out in ships of the fleet, yet this is the vital period of a young officer's career from the point of view of training. The case of the seaman boy is no better; training classes are formed for him it is true, just as a curriculum of study and training is drawn up for the Cadet; but this period for both class of lads should be the period of practice, not study. Neither the ex-Cadet Captain nor the First Class Boy is ever allowed to turn up a boat's fall, steer the ship, man the chains or, in fact, perform the most elementary act of seamanship. It is not the fault of the officers or petty officers who are responsible for

training and who are genuinely interested in it, but with all the duties and the high standard of efficiency required in a fully commissioned ship it is not likely that room can be found for allowing trial and error, slow time, and early inefficiency concomitant with realistic and effective training. The boy has to fit in with the ship, the ship does not fit in with the boy. To members of the old school this might sound a reasonable maxim, but in truth it is not so, for though the boy is a small and very junior member of the ship's company, he is a very important person, for what you put into him in the crowded vital years of training you are going to draw out of him for the rest of his service. Therefore the correct procedure is to provide a ship which will fit in with his requirements, in other words to commission special sea-going training ships for his benefit.

Nothing short of specialized ships will suffice. There was a scheme in effect from 1926 when boys on leaving the training establishments were drafted to battleships of the Third Battle Squadron or " Iron Duke " class, about two hundred being sent to each ship. The scheme was not popular. Two fundamental drawbacks were the unsuitable class of ship and the fact that they were still kept as effective fighting units. Consequently they made unsuitable training ships, and must have suffered in fighting efficiency. The sea time they put in was so limited that they were little more than harbour ships, and no one regretted when they were finally paid off and disposed of under the London Treaty in 1931.

It is to the greatest credit of all concerned that at the present moment, in spite of the cry for economy, the first step is being taken for the better training of the Cadet, and we read that H.M.S. " Frobisher " is being commissioned for Dartmouth and Special Entry Cadets. No one can doubt the wisdom of the step and the good results we may expect. About eighty Cadets will undergo training in the cruiser, and the course will last roughly eight months for the Dartmouth Cadet and twelve months for the Special Entry Cadet. The Cadets will take a large part in the working of the ship.

In reviewing the training problem we must take into consideration too the factor of experience. In the earliest days seamanship, like other crafts, was taught by the apprentice system, which was nothing more than practical experience. The lad was taken into the trade—in the case of the seaman into the ship—and there he picked up his work, imitated others, and occasionally had the art of his craft explained to him. It was a good system in its day, and even at the present time would do much to compensate for lack of early training if the normal work of the Cadet on going to sea gave him the requisite experience. Unfortunately it does not do so.

In such a large Service as the Royal Navy with its great variety of duties it is clearly difficult to generalise on such a point as the amount of sea experience actually gained by officers and men. But one can classify naval service as either " big ship " or " small ship " service. By the former is meant service in battleships, battle cruisers, aircraft carriers and large cruisers; by the latter, service in destroyers, submarines, gunboats, sloops and small cruisers. Though an officer seldom goes through his career serving in only one of these two categories of ships, there is a sufficient tendency to keep a man to the one class for him to be termed a " big ship man " or a " small ship man." Under the former category must come also the specialist officer, for, though he may be serving in a small ship, his appointment is of a sufficiently technical nature to deprive him of any seamanship experience that would otherwise have come his way. Now capital ships cannot provide sea experience; they do not put in sufficient sea time to cure a man of seasickness, and in these ships—some with a complement of over a thousand—pure seamanship duties cannot be allocated to the individual man sufficient to give him the experience necessary to make him a seaman in the true sense of the word. And the seriousness of the situation lies in the fact that it is the big ship that absorbs the majority of the naval personnel.

To quote an extract from a very enlightening article on the subject in *The Times* of 3rd August, 1932 . . . " The deterioration, if deterioration there is, has set in since the War, for during the last fourteen years many opportunities for acquiring habits of command and the art of seamanship have been lost. Shore service for officers has undoubtedly increased. The ruthless cutting down of the fleet, the abolition of many small craft, the curtailment of sea time for reasons of fuel economy, the increase in size of all vessels from battleship to destroyer, and the consequent increase of their complements have all had their effect in stifling seamanship."

## THE PRESENT SITUATION

Before we are in a position to judge whether training in sailing ships is necessary for the Navy of to-day we must get a correct appreciation of the present situation, and what it is that is lacking or requires remedy. In what respect does the modern sailor fall short of his predecessor? Let us first consider the question of seamanship. To many of the old school seamanship conjures up memories of tying knots used for purposes long since dead, streaming the common log—an operation never to be repeated, fishing spars, rigging a jury rudder, sending a spar down from aloft, etc.—all very picturesque, but of no practical utility whatever nowadays. For we work in steel: steel plating and steel ropes, and the work of the mechanic has to a great extent taken the place of

sailorcraft. Even the plea of improvisation in emergency no longer holds good; for consider, what are the present day emergencies? A complete breakdown of the main engines is practically impossible, and in any case we would not improvise sails but would send a wireless message for towing assistance. No one would attempt to rig a jury rudder in a large ship. Even in small matters, such as the failure of the patent log, we would not resort to the old common one, we would prefer to repair the patent one.

Seamanship to-day is not the art of rigging a type of ship which no longer exists, nor of dealing with emergencies which belonged to a past generation. Admiral Fremantle, in a letter to *The Times*, of 15th July, 1932, tells us "A modern officer's professional pride would not now be hurt if he were taunted with not knowing how to set a topmast studdingsail, or a man's pride if he were told he could not pass a weather earing," and he also points out that seamanship is relative to the ship. In all fairness to the modern seaman, therefore, we must limit the term seamanship to those duties which he is required to perform in his ship. If he were required to pass a weather earing in the course of his daily duties I am sure he would do it, for he does many more difficult things. The seaman of to-day has come in for a lot of unfair criticism because it is not sufficiently realised that his art has become mechanized, and he has lost sympathy because there is not the romance in machinery that there was in the old hand methods. The good leadsman in the chains was a credit to his ship, but if the object is to find the depth of water in the quickest, and most accurate and economical manner we now consult an iron box known as the Echo Sounder. It is a sad change, but it must be accepted. The British seaman has not deteriorated; his work has changed in character, and he has had to change with it."

Next let us consider if our seamen lack sea sense. Sea sense is not an easy quality to describe, or even to define, yet it is not an abstract quality; it is something very real. I think it may best be conceived as the instinct which distinguishes the seaman from the landsman. It has been stated that it takes four years to make a sailor. Another way of putting it would be to say that sea sense cannot be acquired with less than four years close association with ships at sea, whereas each individual technical duty of the seaman could be mastered in a matter of a few months. Sea sense is all that goes to create understanding of a ship's behaviour under a thousand varying conditions of weather, tide, and locality. It implies ability to judge distances at sea, to distinguish coastlines in daytime or land at night, to sight ships, lights, and landmarks. It is the instinct which tells you in a gale when to stand on, when to reduce, or when to heave to. It means such familiarity

with the ways of the ship that you care no more for her motion than does a rider for that of his horse. It trains the body to hang on at seemingly impossible angles, yet to have freedom of movement to use every limb and muscle in utmost exertion. It equips the mind to foresee dangers, to anticipate situations, and to improvise in a moment. The list of attributes of sea sense could be extended indefinitely, but the above should serve to illustrate something of its meaning. Whatever it implies, it can only be acquired by the closest association with the sea and the weather.

We have seen that at present officers and men undergo their first and impressionable training period ashore, and are then drafted into a fully commissioned big ship where they become merged in a complement of at least 800 and put in a very limited amount of sea time under conditions which seldom give them any close association with the sea. We have seen, too, that even their later experience does little to compensate for this lack of early sea training. The logical conclusion is, therefore, that under the existing system they cannot acquire sea sense.

## TRAINING IN SAILING SHIPS

A better title for this lecture would really have been "Training in Sailing Ships for the Royal Navy." There is a subtle distinction between sail training and training in sailing ships. The first implies that the seaman is to be taught the art of sailing a ship, the latter merely mentions the class of ship in which his training is to be carried out. Training in sailing ships is, I think I am correct in saying, what is suggested in the utterances of the present First Lord of the Admiralty on the subject. He has proposed that men shall undergo a short period of training in ships classed as sailing ships to develop their sea sense and character. If this was clearly understood, most of the criticism of the Admiralty policy would be seen to be irrelevant.

The sailing ship has been advocated for improving character, seamanship and sea sense. Let us first consider the question of character, which, in the mass, means morale. It is often claimed that the risky and arduous nature of the work in a sailing ship, especially that performed aloft, forms a link between officers and men which, alone, must improve morale. Personally, I think this may be somewhat exaggerated. Work aloft does not differ materially from many other naval occasions, such as a submarine attack, a small ship riding out a gale, turret firing, or even games on the sports' field, all of which might just as well be quoted as means of fostering good relationship between officers and men. They all come under the heading of team work, even if they differ in form. We cannot argue from the experience of past sailing ship training that

similar results will be produced by it to-day, for we must not lose sight of the fact that when it comes to its practical application it will be very different from what it used to be. We can only put in a fraction of the time at sea, we must multiply the crew sixfold, and supplement our ship with auxiliary engines, so that conditions will be totally different from those of the past. Nevertheless, even so modified, sailing ships will carry much of the old tradition with them and not a little of the old hardships, vicissitudes and physical effort. As such they will surely develop resource, self-reliance, quickness of judgment and generally build character.

But we must not overrate the extent of this or imagine that by giving a six months course in a sailing vessel any great change is going to take place in the morale of the Navy. In the first place I do not admit that the general morale of the Navy needs improving, and it is unfortunate that the word morale has been used in discussions of the subject in the Press, for it is apt to lead to wrong impressions. There is, however, a minor and more domestic point in which sail training will be helpful; it will facilitate and foster the company, or divisional, spirit, as we call it in the Navy. The great difficulty in cultivating this spirit in modern ships is the continual redrafting of men, the short commissions, and splitting up of men of a division due to specialized ratings, and to the miscellaneous small duties men are called upon to perform. The team is never complete and it is difficult for a divisional officer to know his men well in the brief time they work under him. In a sailing ship men "work the ship" in large numbers under their own officer; that is to say the team is complete and team work of an arduous nature is their chief business, and though we cannot infer that this will lead to any great change, it will add its quota to the fine spirit of the Navy.

But it is for its influence on sea sense that training in sailing ships is advocated. Earlier in this lecture an attempt was made to describe what is meant by sea sense, and it was emphasized that it could only be produced by conditions of close association with sea and weather. In the sailing ship alone do you get those conditions, for you meet and fight the elements on very equal terms, therefore you must know and study them for your very existence is at stake. The result will be that, in time, seamanship will become second nature. In a sailing ship you do not cut through the sea with the contempt bred of 10,000 horse power, but you call the very wind and tide to your aid. You do not view the sea from a steel platform forty feet above it, you are so near the water that at times you can touch it; moreover you are not in the world of machinery through which we are wont to rush so fast and miss so much. There is time for contemplation.

There can be no finer school for producing sea sense and for developing character than the sailing ship, and I reiterate that sea sense is a very real thing and a very real necessity to the Navy. It was that which made our enemy say in a period of history when the material of our fleet was at a low ebb, " We do not fear your ships, but we fear your men." Lack of sea sense may account for and has accounted for some of the most serious accidents and disasters of the past.

Lastly, there is the question of the influence of sail training on seamanship. From a purely technical standpoint sail training would not do very much to improve the seamanship required in a modern warship, except in as much as it renders the seaman a handy man. Actually mast and yard training has to-day little more technical value than have the parallel bars of a gymnasium, but we accept this when we state that we are training in sail—not " sail training." It has been pointed out that knowledge of handling and manœuvring a ship under sail can have no meaning in the life of the present-day seaman, therefore the incentive that springs from real utility disappears and reacts badly on practical instruction. But I think that this is best answered by pointing out that boat pulling, boat sailing, and heaving the hand lead are already obsolete practices as far as actual utility goes; yet there can never be any question of dropping them, for training in them makes the seaman, and though all around him are more efficient and more economical mechanical appliances, enthusiasm is still maintained by the interest of the moment, as I believe it would be in sailing ships.

## PRACTICAL CONSIDERATIONS

The proposal to re-introduce training in sailing ships has been attacked from practical considerations. First among these is the ever present need of economy. Sailing ships cannot be improvised from existing naval ships, and it would not save much to purchase old sailing ships and bring them up to naval requirements. The only way would be to build them. The specifications would have to include powerful auxiliary engines, adequate accommodation for, say, four hundred officers and men, a number of watertight compartments, suitable boat stowage and hoisting arrangements. In all these respects would a naval training ship differ from the ordinary merchant sailing vessel. A large initial outlay will undoubtedly be called for ; but this should be readily accepted, first on account of the importance of the training, for which very little provision at present exists, and secondly because, once constructed, a training ship does not become obsolete like a fighting ship, and her life can be prolonged for many years. Harbour training ships over a hundred years old are still in excellent condition, and sea going ones of forty years old are still in use. Again there is the advantage of

economical running. Oil fuel is still the largest factor in cruising expenditure ; in sail, wind is the primary motive power, and the upkeep of sails is not a big item. There is, therefore, little difference in the cost of sea or harbour training.

As regards actual cost of construction it is difficult to give a close figure, but £200 a ton, which was the figure given in the Press by a certain naval officer, is much exaggerated. Less than half this would be a nearer estimate. The best way to regard expenditure on training material is to consider what proportion it represents of the total naval estimate for the year. It would then be seen to assume a very modest figure and still come far below that of many smaller states whose ratio of expenditure on training to fighting material is sometimes as high as thirty per cent. True, we may have nothing to learn from them about naval training, but in questions of economy, I suggest there is much to be learnt from our poorer neighbours.

As regards running the ships, I am quite optimistic. To start with, we are not asking officers and men with little initial experience to run sailing ships under the conditions which prevailed in bygone days. We are asking them to work a ship with the safety factor far increased by watertight compartments and equipped with powerful auxiliary engines to get her out of a tight corner, and with a much larger complement than that which used to be carried. It will, of course, be found necessary to have permanent crews, and as the Navy now lacks men with experience in sailing ships, it will probably be necessary to call upon the Royal Naval Reserve to fill up the gap until a naval sailing personnel with the requisite knowledge is available. But there is no unsurmountable obstacle ; sailing a ship is not the " black magic " some old sailor men would make it out to be, and in handling the submarines, aeroplanes, racing motor boats and cars of to-day our young officers and men are performing tasks just as difficult and dangerous as those which were met with in the days of sails. I am sure, therefore, that if they were called upon to handle a sailing ship they would speedily respond. The tragic disasters to the " Copenhagen " and " Niobe " certainly will not deter them, for there is no grave risk in a well-found sailing ship, fitted with auxiliary engines.

To go more into details of manning, it would be necessary to produce and maintain permanently crews of specialists as regards officers and petty officers ; but the Navy is already faced with specialization everywhere, and no doubt officers and petty officers who are now serving in the training service would be regarded as specialists in sea training and be called upon to run the training squadron.

The weakest part of all in a proposed training scheme is the very limited time allowed for the courses. Four years used to be regarded as

the period of apprenticeship training in a sailing ship in the Merchant Service. Even at the present time anything under one year is considered to be of small value. In the Navy, I believe, four months is suggested for the course. If we were contemplating "sail training" it simply could not be done in that time, and the scheme would have to be dropped. But as "training in sail" is the proposal, although very inadequate, we can doubtless say that something can be achieved even in that short period; and it is the very shortness of the time that, in my opinion, is the chief argument for training in sailing ships. In them the training is drastic and intensive and therefore all the more essential where time is necessarily limited.

Midshipmen will, I hope, be allowed a longer period in the sailing ships, and will be a useful part of the complement, as they are elsewhere.

## ALTERNATIVE TRAINING SCHEMES

In a discussion surrounded by so many *pros* and *cons* as is sail training for the Navy the position can often be helped by reviewing the alternatives to the main proposal. In the first place I do not think there is any opposition to the view that sea training must be specialized and that the formation of a training squadron is the only means of effecting this. In my opinion the formation of a training squadron is more important than the question of what form the squadron shall take—steam or sail. Sail I have dealt with, so now let us consider alternatives.

A squadron of sloops or converted minesweepers is one suggestion. This would be more costly to run, but that would not be a condemning factor if there were other advantages. Let us imagine ourselves at sea, on passage or cruising. We have at least a hundred men under training. In any power-driven vessel, it is the propeller that works the ship. How then are we to find employment for so large a crew? In a fighting ship the armament governs the complement. In training ships we particularly do not want an armament, or we depart from our principal of specialization. There is, therefore, nothing left on which to employ the bulk of our men but the minor domestic duties of cleaning, painting, small repairs, or school classes. We cannot regard any part of them as a team while performing these duties, and frankly these are most uninspiring. Unless we indulge in a host of very small steam vessels of the trawler class we can never employ a large training class as "special sea duty men"—the small handful of men in every ship which can be regarded as performing true seamen's duties.

Destroyers have been advocated for training and, as many of them are available in reserve, from the point of view of economy the suggestion

at first seems promising, but the objection to any steam driven vessel holds good, as well as the important factor of expense in running. In the long run, a destroyer training flotilla would cost more than a sailing squadron.

Mechanical appliances have reduced labour and consequently the number of men required actually to work a ship; but we must train in large numbers. Therefore a modern or mechanized ship is unsuited for the purpose, because we should have more than three-quarters of the complement engaged in watching the remaining quarter doing what is really necessary.

Yet another alternative is sailing tenders attached to the seamen boys' training establishments, in much the same way as were the old training brigs. The chief objection to this scheme is the difficulty of working a fixed routine and time table with the vagaries of wind and weather. Conditions are very different now from what they were when the brigs were running; there were then six harbour training ships with brigs attached to each. Even so the brigs themselves were not considered sufficient to teach sea training and, after six weeks in them, the lad joined the training squadron. At the present time it would be imposing too much on the two shore establishments to make them responsible for the early sea training of the large number of boys which pass through them. In a big establishment, routine must run like clockwork. The experiment of attaching a tender to Shotley was, I believe, actually made but was not successful.

As regards the officer establishments, Dartmouth possesses its tender; this is a steam vessel, and I would not recommend it should be otherwise for the reasons just given, and also because I think the change from a shore college to a small training brig would be rather too drastic an introduction to the sea, even if it were practicable.

## THE MERCHANT SERVICE AND FOREIGN NAVIES

The Royal Navy is contemplating adopting a system of training which up to a few years ago was the recognized system in the Merchant Service. The question not unnaturally presents itself, is there anything to be learnt from the Merchant Service about the merits or demerits of this system?

Conditions in the Mercantile Marine are very different from those in the Navy. The young Merchant Service officer begins with a sound grounding in seamanship in one of the officer training ships, and then spends lengthy periods at sea until he is twenty—the minimum age at which he can sit for his first examination. Obviously these conditions are very favourable to acquiring sea sense and a knowledge of seamanship.

The problem of sail training for the Merchant Service has arisen contemporarily with the problem of sail training for the Navy, and has produced an equal amount of argument and disagreement. It is hard to gauge whether the balance is in favour of it or the reverse; but that does not matter much, for, above everything else, the shipping industry must settle its affairs economically, and no training scheme that is not an economical one, or even one not self-supporting, would run for long in the Merchant Service. I believe many of the leading shipping men would like a limited period of training in sail for officers—say twelve months, or a quarter of the apprenticeship time, if there were sailing ships to serve in. As there are not, the existing training facilities are being used to the best advantage. As regards Merchant seamen boys or youths, it is not practicable to give them sail training, so the position is accepted and they serve in steam ships.

Although there are fixed regulations concerning length of training and sea time, yet there are many varieties of training schemes drawn up by different shipping companies. Some of them are excellent, and show the greatest forethought. For instance, a large company on the New Zealand run has two or three vessels specially fitted up as cadet ships. The cadets work the entire deck department of the ship and are given instruction in navigation, boatwork and the duties of an officer, special officers being appointed for instruction. From the number of its training schemes, therefore, the Merchant Service has the experience and results from which its representative body, the Honourable Company of Master Mariners, can draw up reports and advise on the subject.

Broadly speaking, however, the Merchant Service officer does not lack sea sense, for even if he is without the advantages of organized early training through there being no common entry, he makes up for this in the experience he gains in the long periods of sea time. As sail training would not help him very directly in modern seamanship, any more than it would help the naval officer, therefore, except for a professional "final polish," it would be of little advantage to him to go into sail.

Merchant Service problems of training are as different from naval ones, as naval sail training ships would be different to the sailing ships of commerce. There is, therefore, little to be gained for the Navy by a study of the sail training controversy in the sister Service.

I think there is more to be learned from what foreign countries are doing in naval training, although no doubt there will be those who will assert that our country should take a lead in these matters and can have nothing to learn from abroad, especially from the many countries whom we have actually taught to run their navies.

However that may be, there is a significance in the fact that France, Germany, Italy, Greece, Sweden, Denmark, Finland, Spain, Poland, Rumania, Yugoslavia and Soviet Russia all possess and run sail training ships for naval cadets and seamen boys; the smaller states carry both classes in the same ship. Also, that such training does not belong to the past is evidenced by the fact that no less than five of these countries are building, or have allowed in their estimates for, new sail training ships.

## SUMMARY

There is real evidence to prove that the present system of training in the Navy does not provide what, for lack of a better word, we call sea sense, and that specialized training ships are necessary to create it.

It would be most desirable, too, if " ship sense " could be developed at the earliest and most impressionable age of the young seaman, that is to say before he goes to sea to acquire " sea sense." This could be done by a reversion to the harbour training ship which, in the case of officers, could well occupy two out of the four years Cadetship at present served ashore. A ship like H.M.S. " Tiger " would lend itself admirably for the purpose.

The problem of training seamen boys presents many more difficulties than even many naval officers realize. Twelve hundred recruits were entered in 1931. Problems of manning and economy prohibit lengthy training periods, whether ashore or afloat. Therefore the training scheme must provide for large numbers and short courses—a severe handicap on any instructional scheme.

Under present day conditions of expediency and safety, sailing ship training would be only a remote approximation of what it used to be, but without doubt it is the best sea training. Broadly, we would train our seamen in sailing ships for the same reason that we train them in sailing and pulling boats, and for the same reason that the soldier is trained on the parade ground. Neither sailing ships, sailing boats or parade grounds have much relation to modern warfare. But they will make the young officer or man into the seaman or soldier we require and the means therefore justify the end.

No one disputes the value of pulling and sailing practice in the Royal Navy. Practice in a sailing ship is of the same kind only of a much higher degree. It is not proposed to go " back to sail," but to place young seamen for a few months in an auxiliary sailing ship, because in the limited time available it provides the most drastic and intensive, and therefore the most effective, training.

## DISCUSSION.

ADMIRAL SIR SYDNEY FREEMANTLE: I hope that I may be considered qualified to say a few words on this very important subject, seeing that I was brought up in the traditions of the sailing days, and those traditions die very hard. I served for eighteen months in a corvette in which we spent two-thirds of our time under sail. I was for six months as a Midshipman, and for a year as Lieutenant in the old training squadron, and I did my six months in the "Cruiser," the sailing training ship in the Mediterranean. After that I served only in mastless ships. I therefore have had a pretty good experience of the Navy in the transition stage from the traditions of masts and sails to the present.

My view is so strong that reversion to training under sail, if not a calamity, would be a very grave mistake, that I should like to spend some considerable time in endeavouring to prove my case. But I will confine myself to one aspect of it only—the one which seems to me to have received the least consideration in spite of its importance; I refer to the almost purely psychological aspect. In the first place, I wonder whether the advocates of sail training realize the immense amount of knowledge which is required before the lad under training can play any part whatever in the handling of a ship under sail. There are the names of the spars, the names of the sails, the ropes, the rigging of the masts and yards. Then, again, there are the technical terms which must be common knowledge to him. There are the functions of the ropes, the methods whereby the sails are set and furled, and the yards trimmed. None of this knowledge exists in the modern Navy. At the outset, it would have to be acquired by the officers and petty officers who were to carry out the training. It would be mere book knowledge, and not knowledge supported by any experience of its practical application. It would also be knowledge acquired with an academic object only, and would be of no value whatever in the general service of the Navy. Is it likely that instructors equipped with a limited knowledge of that character, and obtained in such a way, will have any confidence in themselves, or will inspire any confidence in the young officers and men whom they are endeavouring to instruct? In the old Navy so much education was imparted by example. The captain of a top was usually the smartest man aloft, and he and other leading hands set an example and a standard of performance for the youngsters to work up to. He would probably have graduated through being a smart upper-yardman, and would be able to impart a good deal of his experience to his pupils. Our modern petty officers and leading hands have acquired their rates for very different qualifications; they would be quite unable to set any example in the training which they are endeavouring to instil; they would have no experience of which they could give the boys the benefit.

Then from the point of view of the young officer or young seaman under training, will he be the least bit interested in the acquisition of a fund of knowledge which he knows will be entirely useless to him in the course of his naval career, and will he take any trouble whatever to attain any standard of smartness aloft and in the handling of material which he will never see again? Will he not consider the discomfort which is inevitable in working a ship under sail as being inflicted on him for no useful purpose?

It is quite true that the working of a ship under sail fostered certain qualities which are of general use in any out of door profession; qualities such as alertness, the spirit of comradeship, initiative, presence of mind, self-reliance, foresight, quick responsiveness to varying situations, skilled attention to weather conditions and, in the case of officers, confidence in handling considerable bodies of men. But these are not qualities in which the ordinary Englishman is naturally deficient;

they are those which can be produced by a training which has somewhat more practical application to the work of the profession, and there is no evidence that they are lacking in the modern Navy. It seems to me that if the training is to be effective, particularly in these days when the standard of modern education is so high, there are two indispensable conditions. The first is that the instructor shall be a master of his subject and shall inspire confidence in his pupils. The second is that the value of the training shall be evident to the pupil, and that he shall realize that the knowledge he acquires will make him a better professional man. Neither of these conditions obtains, and I therefore believe it is unlikely in the extreme that such training will be effective.

Purely destructive criticism is usually to be deprecated, so I should like to make a constructive suggestion. I find it to be on very similar lines to the second alternative put before us by the Lecturer. I agree with him that sea experience and sea sense should be acquired in the interval between the training ship or college and going to sea. I think that sea sense would be best produced by acquiring three or four sloops which would be maintained as sea-going training ships for young officers and men jointly. Those sloops should cruise constantly, chasing the fine weather, and they should cruise sometimes in company. The training in these ships should be practical training only.

Commander Steele spoke about the number under training being a hundred, but I should imagine, though I never served in a sloop myself, that the seamen complement would be considerably less than that. Speaking from memory I think the whole complement would be something like a hundred and twenty, and I should put the number under training at something nearer sixty than a hundred. The matter is important, because the number should be small enough for individual attention to be given to the young people. There would be plenty of scope for boat work and anchor work. Training in navigation, pilotage, and officer-of-the-watch duties would be invaluable to young officers, and could be given to a very considerable number. The work would not be manufactured work, which it would be in a sailing ship, but would be work directed immediately to proficiency in the type of seamanship which is actually required.

One word in conclusion. There seems to be a prevalent idea that it is the men of my generation with experience in the old Navy who are the principal advocates of reversion to training under sail. I have talked to a good many on the subject, and I find it far from being the case that anything like the majority of us desire this revival. We hold this view very largely because of the importance we attach to the great part played by tradition, by knowledge, and by experience, in those who have trained us. The proper atmosphere for training under sail does not exist. The tradition has gone, and it cannot be revived. The knowledge and experience are not there. Without them the training can be of little value. It would take up time which would be very largely wasted, and in my humble opinion it is training of a nature to discourage the zeal and keeness of young officers and men at a very receptive age.

CAPTAIN F. K. C. GIBBONS, R.N.: My experience goes back to even a year or two before that of Sir Sydney Freemantle. The whole of my time as a Midshipman was spent in a sailing corvette and in a brig. Afterwards I was with the training squadron as a Lieutenant, and eventually First Lieutenant of a sailing corvette.

With all deference to the Lecturer I really do not see how six months sail training is going to make a seaman of any man. In the first place I do not see where you are going to get your instructors. Neither the officers nor the petty

officers will know how to teach. Many years ago—I think it is forty-three years ago to be exact—I listened to a lecture on masts and yards given by the then Captain Gerard Noel, in which he deprecated the loss of efficiency of the Navy in those days. He said we were none of us seamen. As a young Lieutenant it was very depressing to be told that one was no good as a seaman. Fortunately, however, about three days afterwards I came across a book published in 1835 called "The Naval Officer's Manual," written by Captain Glascott. He said the decrease in seamanship that had taken place since the war was dreadful; there was hardly a seaman afloat. So I came to the conclusion, that there was possibly some hope for me after all. There is no doubt whatever that training in masts and yards was a very fine training, and produced fine qualities, but you can secure those qualities by other methods. Rugby football and boxing are certainly good training. Games produce the qualities we want just as much as training in masts and yards, while they do not waste time. I believe also that riding across country is excellent training, though it is rather expensive now-a-days.

Another objection to sailing training ships is their expense. In these days we cannot afford side shows. I think we all agree that training in masts and sails was very fine, but the question is whether under present conditions we have room for it. I agree with Sir Sydney Freemantle that we have not.

Captain J. F. Somerville, R.N.: I share very much the views expressed by the Lecturer about the efficiency of training under sail. There is one aspect of it which I think we ought to remember—and I say this with due consideration—it is that nowadays there is a certain reluctance on the part of men to risk their skins. There are a number of men who cannot face going aloft, or over the ship's side in dry dock, because, as they graphically express it, they "came over queer." I think that is a fact which must be taken into consideration. It is largely due to the work the men have to do nowadays. They are not called upon to risk their skins or limbs in the normal work of the ship. The only time when there is some risk is during general drill. I think it is the experience of most officers that the first time you have general drill the men do not throw themselves over the side into the boats as you would like them to do, though they warm up to it in time. I like to see men taught at an impressionable age that it is quite easy to risk your skin without breaking it, and I think training under sail would be very valuable in this connection.

I would not send boys to sea quite young, or as junior Midshipmen. I would wait until a boy is an ordinary seaman or young able seaman and, in the case of a Midshipman until he is either a senior Midshipman or had been at least a year at sea.

As regards the question of whether we shall ever get a standing complement of officers and men who have the knowledge to handle these ships, I think the difficulties have been very much over-stated. I might remind you that a good many of us have handled square-rigged models under sail. I had a twenty foot square-rigged model, and I found that after a fortnight's instruction any intelligent boy, and certainly any Midshipman, would know the run of the gear and in three weeks or so would know more or less how to handle the ship.

Captain Sir David Wilson Barker, R.N.R.: Speaking entirely from the point of view of the Mercantile Marine Officer, I have no hesitation in saying that in my opinion sea training should be conducted in steamships. I entirely agree with Admiral Freemantle's remarks about acquiring "sea sense." Ten years—half my practical life at sea—was spent under sail, so I speak with the experience

gained in the ships of those days and not in modern sailing ships with differential winches and other appliances which lighten the work so much.

That a young seaman's career should begin in a stationary training ship is exceedingly valuable because, as Commander Steele has pointed out, there is so much more knowledge that he can acquire and so many things he can learn to do better and more easily in that school than in a shore establishment. The Mercantile Marine suffers from lack of experience in boat sailing and rowing for which there is little opportunity. But I have no hesitation in saying that the young officer who gets into a properly run steamer nowadays, is taught his profession thoroughly and acquires " sea sense " as rapidly in steam as in a sailing ship ; furthermore, he knows that all the knowledge he acquires therein is going to be useful to him in the future.

But is there really anything wrong with the men who command the ships of to-day ? Apparently not. There is no lack of fine seamanship. Reports of accidents at sea occur, but is there any real adverse criticism ? Hardly ever. As a rule ships are handled as well as they ever were by the sailors of old, although most of to-day's seamen have had but little to do with sailing ships. In reality, the time served in apprenticeship in a sailing ship is so much time wasted in scrubbing decks and tarring down ! Nothing that might be useful to them in the future is taught the lads because there are but very few of their seniors or superiors who will trouble to teach navigation or the handling of a ship. In my opinion, young fellows trained in steamships will be quite as good seamen as were their predecessors.

Rear-Admiral Geoffrey Blake : I agree very much with what Captain Somerville has said. I do not wish to reiterate the arguments which have been put before us so ably by Commander Steele, but I do think we want to view this matter simply and clearly. I suggest that, if we ask ourselves three questions we may get a line on the argument.

The first question is : do we find at the present time in the young officer and the young seaman when they come to sea a lack of initiative, resource, sea sense—in the way that Commander Steele expressed it, enterprise, and all those qualities which go to make good officers and good seamen ? Speaking from personal experience and observation, I think we do find this lack.

The next question is, what is the reason ? To put it very briefly, I should say the reason is national decadence and the system of training.

The third question is, how are we best to get over these faults ? Personally, I am in complete agreement with Captain Somerville, and with the Lecturer, that the best method to overcome these defects is by training in sailing ships, not sail training. We cannot expect to produce seamen in fourteen weeks, or six months, or even in two years—and we do not want to ; but we can by training in sailing ships give them something which they undoubtedly lack at the present time and which cannot, in my opinion, be obtained in any other way. If we want it, we should have it, and administrative difficulties, financial difficulties, lack of knowledge, and those sort of objections must be overcome.

Admiral Sir R. G. O. Tupper : I was brought up in a sailing frigate to start with, and then in a sailing battleship, the " Bellerophon," and right through I have alternated between sail and steam. When I commanded the " Pleiades "—a barque rigged cruiser—I had to sail about the Western Pacific Ocean, and was promoted to Captain out of her in 1901.

I agree with Admiral Blake and Captain Somerville as to the value of sailing ships for training, and I think if we could afford to have a sailing ship attached

to one of our training establishments, it would be beneficial. But I also think that young officers and ordinary seamen should be trained by having to do the work of the ship in small craft like sloops and destroyers. I do not think that the officers and men under training in a ship like the "Frobisher" will get the same kind of sea sense and knowledge of the various duties that fall to a seaman as they would acquire in small ships.

As a junior Commander I commanded the first destroyer, the "Havock," and developed the first flotilla, so I know something about destroyers and fast running craft. Destroyers are a wonderful service for the training of all officers in the sense of command. I have known cases of officers who, having been employed in specialist duties or as second-in-command, had never acquired any sense of command, and, when they were suddenly put in command of a ship, their nerves would not stand it. On the other hand, destroyers have produced a lot of Captains who handle their ships in a way that pilots handle ships, and even better than most pilots. In fact destroyers give their captains and crews sea sense in a way that they do not acquire it elsewhere.

If, therefore, the idea of the sailing ship training does not fructify, I do hope that the training of officers and men will be carried out in small craft—sloops and destroyers. But above all this, there is the question of boats under sail. Not long ago, I spent four days in one of our battleships at Portland. The Fleet was there, including the Battle Cruiser Squadron; yet during those four days I only saw three ship's boats under sail; two of them were Captain's galleys, and one was a cutter. Now, a very great deal can be done by boat work, and it is a great pity that the Midshipman of the present day gets so little practice in boat sailing. When we were Midshipmen, we had charge of a cutter with twelve men, and the coxswain, and we had to handle her under all conditions of wind, tide and every other circumstances, and we had to develop the power of command of the men under us. We took all sorts of risks. If we made a mistake we had a very unpleasant time with the Commander; but that boat work did a tremendous lot of good to us.

We want lots of boat work, and training in small ships. This will increase the efficiency of our deck personnel without increased expenditure.

VICE-ADMIRAL SIR WILLIAM BOYLE: Having seen a great many young officers in the last four years, and having had the opportunity of seeing something of the men in embryo, I believe that the human material we are getting now for the Navy is wonderful. We take our officers and men from childhood, and if we cannot make them what we want it is not their fault. We have them to ourselves, and in that respect we have a far greater advantage than other services in handling and shaping our raw material.

What is it, then, that we want to produce? In a debate here in 1900 it was held that we wanted to make the British sailor the finest form of seaman existing, or words to that effect. What do we mean by "seaman"? It is quite impossible to make the British sailor the finest form of seaman, because there are many forms of seamen from trawler men upwards, all very fine in their own way. What we really want is to make him the finest man-of-war's man afloat, and that is what I believe him to be.

When I was at Greenwich I got all the Lieutenants and Sub-Lieutenants under training to give me their own views of the training that they had had, and they were unanimous that what they wanted was training in small ships, where they would be left on their own and have responsibility put upon them. One and all

said that the time they spent in battleships was largely wasted from the point of view of gaining practical experience.

We have all sorts of systems of training in the Service, and many of them produce excellent officers, but my own opinion is that the greatest fault we suffer from is over-specialization. We get excellent fellows from the submarines, but they are not so well trained in some other ways. I believe myself that, speaking generally, the finest training in the Service to produce officers who will take charge of men and who will look them in the face and see they obey an order when they get it, is that given in the Gunnery Schools. There, officers are properly trained to command and thoroughly grounded in their speciality. They are given an opportunity to develop on the Junior Staff, where they are under the supervision of the Senior Staff. Then they go to sea in small ships as Gunnery Officers, where they have responsibility, where they are consulted, and where they have a very important stake in the efficiency of the ship. If we can only combine various forms of training, if instead of keeping these Officers at their speciality all their life, we could take them away from it at times and give them other forms of sea experience, particularly in command, we should obtain excellent results.

I believe that specialists should have much more varied service, and that they should do much more general service before they are allowed to specialize. What we really want to do is to overhaul our system of training and aim at giving officers more responsibility as young men. We can do that by commissioning a large number of small ships, if necessary paying off some of the big ships. I suggest that we should not over-specialize thus giving special training to only a few, but that we should spread it over a large number. If we keep them in a groove we cannot expect to produce all-round officers.

THE CHAIRMAN:

I am sure we have all listened to the Lecturer with great interest. He has made a good case and has put it exceedingly well, but I must confess that every instinct that I possess and all my experience of the Navy of to-day is opposed to the re-introduction of sailing training ships. He made it clear that he does not advocate training under sail, but training in sailing vessels, and he states that it will be necessary to build special ships fitted with powerful auxiliary engines and with adequate accommodation for, say, four hundred Cadets and men. Training under sail must of course appeal to the sentiment of seamen who like myself have spent several years in vessels under sail. But it is no use basing policy on the assumption that there will be no more war, and in these days of urgent economy, when the Admiralty has to fight for and account for every penny it spends, it would be difficult to justify expenditure on such a luxury as vessels which under no conceivable circumstance could be of military value, if sea service, sea training and training for service in modern war vessels can be acquired, and better acquired, in the vessels we already possess: vessels of a type which proved indispensable in the last war and which we would have to produce in considerable numbers in the event of another war with a nation possessing submarines and minelayers.

The Lecturer has given us some alternative systems, one of which I recommend, and I propose to try and justify its adoption. Before doing so, however, I would like to say that I was brought up under sail and for the first ten years of my service, except for a few months in a cruiser, I served in vessels which cruised mainly under sail. As a Midshipman of 17 I commanded a service cutter armed with a Gatling gun and manned by twelve men, and I sailed into the blue for some weeks to cruise for slavers. What finer thrill could there be for a young Midshipman. A year later I was in a training brig and every other day was left in charge of

the ship for the afternoon watch with orders, say, to beat from Little Yarmouth Roads to Spithead. Those were days of happy memories but, as all my contemporaries who have spoken to-day agree, they are days which have passed. I can say very definitely that I did not start to train for the Navy of to-day and for modern war until I found myself as a young Lieutenant in command of a small destroyer, and felt the sting of salt water at high speed; at first in the Channel, later all over the China Station. I have been under way alone in the Inland Sea for a night and a day in a raging typhoon; in a typhoon in the Formosa Channel on a lee shore with very little sea room, with rivets cracking and sea pouring in through plates which buckled and opened with every pitch. Surely my shipmates and I were gaining sea sense, sea experience, self-reliance and every kind of seaman-like quality required for service in the modern Navy.

The Lecturer suggested as an alternative to a Sailing Training Squadron, squadrons of small vessels, sloops, minesweepers or destroyers. I prefer destroyers because I attach great importance to occasionally manœuvring in company at high speed. I think no better training could be given to young officers and men than in training flotillas of small vessels—the smaller the better.

Twenty-five to thirty years ago each of the three Home Ports had a training flotilla of destroyers. As a young Commander[1] I commanded one consisting of eight destroyers each of about 360 tons. We had no parent ship or Captain D. We trained young seamen and stokers to find their sea legs and sea sense, petty officers to be coxswains, and young officers to accept great responsibilities. It was our pride that neither bad weather nor fog kept us in harbour. We cruised all round the British Isles, the Commander made all his own arrangements for fuelling and provisioning, his second-in-command was a Sub-Lieutenant. Surely we were all acquiring sea sense and sea experience and the officers leadership and fitness for higher command.

One of the Members remarked on Sir Gerard Noel's disparagement of the seamanship of officers and men some forty years ago which he, Sir Gerard, attributed to the passing of masts and yards. About ten years later he was in command of a battle fleet and armoured cruiser squadron, and my flotilla was placed under his orders for three weeks exercises. He told me he attached very little war value to destroyers because they could not keep the sea in bad weather. I vowed I would convert him, and had the good fortune to get the opportunity. The battleships and cruisers were in Loch Swilly, the destroyers in the Scilly Islands. I had orders to attack Sir Gerard's fleet before he rounded Land s End. When I heard that he had left Loch Swilly it was blowing a South Westerly gale at Scilly, so I ran before it to try and intercept him off the Smalls during the night, managed to get through his cruiser screen unseen and attacked the battle fleet at very close range—unseen and unsuspected, because heavy seas were breaking over the battleships' bridges and they thought we would be weather bound. A letter giving Sir Gerards' warm appreciation and admitted conversion is a valued possession. I consider that there could be no finer training for young officers and men than such service in small ships.

One more memory. My flotilla was in Plymouth and the Commander-in-Chief had given me permission to take it to Liverpool to see the Grand National. On Monday of that week it was blowing a South Westerly gale, we literally fought our way to Land's End, after rounding it the wind veered to the North West. We struggled to the northward across the Bristol Channel, and crawled into Milford

[1] Seventeen years later some of these same destroyers again formed part of the Chairman's Command when he was Vice-Admiral of the Dover Patrol.—EDITOR.

Haven on Wednesday morning, very weary, to rest and coal. On Thursday at dawn we set out in the teeth of a very strong northerly blow, and arrived in the Mersey two or three hours later than I intended, so that, instead of passing into the lock at Birkenhead at slack water, we had to take the narrow entrance with a sluicing cross tide. Nevertheless our battered destroyers, with broken bridges and caked with salt water, were safely berthed within a few miles of Aintree on the morning of the Grand National, and several hundreds of officers and men saw the race.

No doubt there are people who will wonder what this has to do with naval training. On the other hand there are many, I am sure, who will agree with me that such enterprises are in the best interests of the Service, and I have no doubt that the memory of them helped officers and men, trained as we were, to endure and suffer hardships in the War with courage and fortitude.

To sum up briefly, those of my generation who were brought up under sail and who have spoken to-day are unanimous in deprecating an attempt to re-introduce sailing training ships. Captain Somerville has made a very good case for sailing training ships. Anyone who has seen him handling his 20 ft. full-rigged ship can have no doubt as to his ability to handle one of the new sailing ships if they are ever built; but I trust they never will be because I doubt their value to the modern Navy. Admiral Tupper spoke of the days when the Navy was in a stage of transition between sail and steam and said that some Captains failed because they got no experience in command until they were middle aged. But during the last thirty years destroyers have produced a splendid breed of Captains, tried and proved in war. I think one of the best innovations of recent years is the appointment of young Gunnery, Torpedo, and Staff officers, on promotion to Captain, to command destroyer flotilla and half flotilla leaders in order to gain the experience their previous service deprived them of.

In conclusion I have the Lecturer's permission to tell you that he was not trained under sail and has never served in a sailing ship. All I can say is that he is a shining example of an officer who was not trained under sail who has proved that he is a seaman full of initiative, enterprise and all those qualities which are wanted in the Royal Navy of to-day. I hope we have persuaded him that there are better ways of training officers and men for the modern Navy than in sailing ships.

THE LECTURER:

I am afraid I have not been persuaded about that. I do want to make it clear that there are at present two systems of training—one for officers, the other for men. The "Frobisher" is a most excellent ship, although I would very much prefer to see sloops provided instead of so large a ship, because no-one can doubt that they would be much better for acquiring sea sense. But it is for seamen and seamen boys that I am advocating large sailing training ships. It is economic conditions which govern everything. If it were possible to provide small ships I do not think the alternative of larger ships would have been suggested, but I believe a number of ships of the sloop class would be very expensive indeed. I had command of a sloop, the "Cornflower," and our complement was eighty men. I do not see how we could occupy the training class in a ship of that kind. The officers were well provided for, but with seamen we want to produce the spirit of team work, and I do not see how in sloops and destroyers you are going to get that team work. In large sailing ships you constantly get twenty or thirty men doing a most arduous job together. It is that sort of thing which provides the sea sense which is so very important.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

# ARMY TRAINING 1932

By Captain J. R. Kennedy, M.C., *p.s.c.*, late R.A.

*In a world-wide Empire the Army may be called upon to fight in developed or undeveloped countries, and under every condition of climate and terrain. In India, and in certain other parts of the Empire, the garrisons are faced with specific military problems, but, broadly speaking, there is no single predominant objective towards which the training of the Army can be categorically directed.*

*Though the field of military activity may be further sub-divided, it is convenient to limit the possible number of cases to four broad categories :—*

(i) *Imperial policing ;*
(ii) *Minor expeditions, possibly on peace establishments ;*
(iii) *Major expeditions, which may or may not include the Territorial Army ;*
(iv) *A national war.*

(Training and Manœuvre Regulations.)

IN formulating their training policy for 1932 in the words quoted above, the Army Council were primarily governed by national considerations. The fighting forces of this country must provide for its security. But they must also be prepared to reinforce local forces in any part of the Empire, or proceed on completely independent missions. As our standing Army is small it cannot possibly fulfil all these roles at one and the same time, and it is the Government, in accordance with its estimate of the world situation, which must decide for which mission it must primarily prepare. Now, until the beginning of last training season preparation for participating in a " great war " received priority. But during this year the nations had collected at Geneva to take part in the Disarmament Conference, and a great war seemed far more remote. On the other hand, many occasions had arisen which seemed likely to call for " imperial policing " and minor expeditions, so that it was reasonable to expand the training programme to include more special training for these lesser functions.

The curtailment of the annual training grant also made it impossible to hold manœuvres with large formations, even on the modified scale of the last six years. A drastic change of programme became necessary, for the conditions of a " great war " cannot be adequately or realistically reproduced by small units working by themselves. Nor do such operations tend to develop sufficiently the initiative, resource, and

responsibility of junior leaders. Exercises of the "great war" type, finally, tend far too much to the rigidity of the text book, and inspire those who are engaged therein with a feeling that there is a right and a wrong solution to every problem and nothing else. In fact, they end by becoming too complicated and too stereotyped. The troops themselves are apt to lose interest in what are to them academic situations repeated *ad nauseam*. This year's exercises were worked out to avoid these defects, while major operations of the sort that must be expected while our present organization holds good entered into the training without in any way monopolizing it.

With the exception of the tank battalions, units trained at their normal stations. A list of the actual exercises carried out, with the lessons learned or supposed to be learned, would be merely tedious. Only a few typical examples showing the general trend of the remainder will, therefore, be mentioned.

(1) The opening exercise of brigade training at Aldershot took the form of a march by a column detailed to revictual outlying posts. This column consisted of two troops of cavalry, two battalions, a brigade of field artillery and a brigade signal section. Two battalions, supported by a light battery, had the task of intercepting the column, harassing it and, if possible, preventing it from attaining its object. The country to be traversed by the column had both wooded and open areas, and so afforded variety in the application of guerilla tactics by one side, and of defensive measures by the other. Both sides were commanded by junior field officers, whose powers of ingenuity were taxed to the utmost, as were also those of most officers and men of both sides. Such a situation might present itself anywhere in the Empire, where attack by irregulars is possible. The column, in spite of being sadly harassed, managed to reach its objective, though not without serious losses.

(2) In another exercise, a cavalry brigade reinforced by a troop of armoured cars and a brigade of horse artillery acted as flank guard. The armoured cars located an enemy force moving in buses, and by giving early and good information enabled this force to be surprised and roughly handled; the horse artillery were even able to engage the lorries over open sights. The exercise demonstrated the possibilities and limitations of cavalry in open and enclosed country, but the actual events lacked reality in that the enemy infantry were not supplied with means of reconnaissance and were thus surprised in their lorries. A situation of this nature might present itself at the beginning of a great war—indeed, it recalled the opening stages of the late War—and is a demonstration of training with such means as are available, rather than with what resources should be forthcoming some eighteen years after the mobilisation of 1914.

(3) In yet another exercise an imaginary sea was created, and an infantry brigade was given the task of landing and organizing a position to cover the disembarkation of the main body. The operations were reminiscent of the Gallipoli landings, both in the problem facing the commander and in the organization of the troops engaged. They depicted a situation which really might at any time arise. Initial surprise was effected, and the landing troops very wisely dug in and put up wire before they could be pushed back into the sea. A new note was sounded by placing field guns in silent positions to provide for anti-tank defence—a use of these weapons to which further reference will be made.

(4) In a further exercise a small force of infantry occupied a position, dug in and wired, and was then attacked by a much larger force supported by a whole divisional artillery which, in the traditional manner, provided a barrage.

Both the latter exercises demonstrated the speed with which a defensive position can be organized, to overcome which it is necessary to return to the penetration tactics of the late War, or to use tanks.

(5) Later exercises pitted infantry brigades, with attached troops, against each other, with or without air co-operation. On one occasion an infantry brigade was given a front of ten miles to protect against a raiding force of a similar strength, but provided with mechanized machine guns and artillery. The defending force was supplied with enough motor transport for two battalions, while the attacker had enough for one only. An interesting feature of this exercise was the capture of the commander and C.R.A. of the defending force while carrying out a personal reconnaissance, an event which may easily occur in this type of fighting.

No formation above a brigade took the field in the Aldershot Command, and no officer of higher rank than brigadier received practice in the handling of troops.

Sufficient has been said to show that the exercises took full advantage of the liberty granted by the policy adopted by the Army Council, and were ingeniously chosen to develop qualities in the junior leaders which continuous training for " great war " conditions is apt to leave somnolent. The close of the training was marked by a tactical exercise in mountain warfare without troops, carried out under the direction of the C.-in-C., Aldershot Command. As no suitable country for this type of training is available within the Command, the scheme was set in North Wales, to which syndicates of officers travelled. The exercise was believed to be entirely successful.

Perhaps the most interesting part of the year's training was the assembly on Salisbury Plain of four tank battalions for combined exercises as a brigade. When the previously existing and experimental mechanized force was disbanded, it was generally felt that progress had received a set-back in the interests of economy; it is therefore most gratifying to note that it has been temporarily resuscitated for training. The Inspector-General of the Tank Corps, with an improvised staff, took command. Early in August, a composite light tank battalion was formed from the light tank companies which had previously been training separately, and these were trained with a view to providing practice in, and establishing the best tactics for, advanced guard work in all its phases and operations such as the exploitation of a break-through. The new light tank, with its increased speed and protection, was thoroughly tested. It took the place of the slower machine-gun carriers which have hitherto been in use, and whose supersession called for a readjustment of ideas in the employment of these weapons.

On the conclusion of this period of training, the light tank battalion joined the three mixed battalions, in the composition of which were included light, medium and close support tanks.

The training of the mechanized brigade included tank *versus* tank and tank *versus* field gun battles, as well as distant raids on enemy headquarters and supply columns, intervention in the infantry battle by attacking both the enemy guns and the enemy forward defences. The problems set in these exercises were far from simple. An enemy headquarters to be attacked was, in one situation, protected not only by a battalion of tanks and a company of mobile anti-tank weapons, but also by the nature of its surroundings, which restricted severely the lines of approach of an attacking force. By a clever feint, made possible by the speed of the new tanks, the attackers got home, and, though they suffered heavily, they succeeded in creating such disorganization at headquarters and in the system of supply, as would have been difficult to remedy in war.

In certain exercises, a cavalry brigade and an infantry division co-operated with the tank brigade, and valuable lessons were learned. The cavalry in one exercise carried out a charge round a flank against machine guns and guns. " C'était beau mais ce n'était pas la guerre ! " For this type of work, the light tank has superseded the horse.

So long as we retain infantry as the assault weapon for " great wars," there are two fundamental problems of its co-operation with tanks to be solved. The first is infantry support by artillery in the attack with tanks, since infantry cannot, and should not be asked, in country where

tanks can operate, to advance alone, and the second is the defence of the infantry position against a tank attack.

The co-operation of tanks and infantry in the assault is rendered difficult, if not almost impossible, by the fact that we thereby employ two assault arms, having the means to support one only. The artillery of the division, without the full support of which the infantry cannot advance, is insufficient to infantry requirements, and certainly cannot do its duty by the tanks as well. To launch tanks not adequately supported by artillery is unjustifiably to risk their loss. Owing to the difference in speed of the infantry and the tank, the two cannot advance together. Yet the organization of our Army demands the solution of this problem. In this year's training the question has again been studied, but a satisfactory solution has not been found. One fact stands out clearly in this connection, namely, that for operations against an enemy with modern equipment we are much under-gunned. It is believed that a solution is being sought in the production of a tank more suitable for co-operation with infantry. Such a tank would have to be slow and very heavily armoured, and even if bridging difficulties could be surmounted, it could not probably take part in the initial stages of a war.

Infantry defence against tanks was thoroughly tested, and revealed very serious defects. The battalion has four anti-tank guns which are just as inadequate to protect the front held as the two machine guns of 1914 were inadequate to stop a hostile attack. Owing to the fact that these anti-tank guns are not in the hands of battalions, their teams are not being practised in their use, which, with the increasing speed of cross-country vehicles, will demand a very high standard of technical training. No second-line weapon for anti-tank defence exists, even in theory, and field guns, have, therefore, to be taken from their normal and necessary tasks to provide for this want, a practice which cannot be too strongly condemned, if for no other reason than that it is liable to lead to impossible demands being made on the artillery for this purpose and consequent misunderstanding and friction. The real difficulty is that a satisfactory weapon has not yet been produced. For, while it would be possible to supply existing machine guns with armour piercing bullets to deal with light tanks and to provide an additional weapon, such as a gun of small calibre to deal with the medium tank, there is a strong disinclination to complicate further the divisional organization. One weapon, combining both requirements is being sought, and in addition, there will probably be some form of mobile defence, such as tanks specially allotted for the purpose.

The exercises on the Plain have certainly demonstrated the difficulties which will face a commander and his staff in directing and controlling

mechanized formations, and the imperious necessity of adequate practice for both in time of peace if they are to function efficiently in time of war.

No attempt can be made to catalogue training in all commands, nor in all directions, but one or two further aspects of training should be mentioned.

The 5th Division at Catterick was able to carry out an exercise with all its troops on the ground, although one brigade had to represent the enemy. This exercise was of the initial-stages-of-the-Great-War type. The Air Defence Brigade defended Aldershot from a formidable air attack, while the Royal Engineers carried out their annual bridging camp at Wyke Regis, where the difficult problems in bridging, created by mechanization, were dealt with.

The efforts made by the Territorial Army to overcome the cancellation of their training grant, and the benefit both they and the Regulars have received from co-operation, have already received the publicity and praise which they deserve. It is to be hoped that in future years this co-operation will be increased, and, with the return of the training grant, make it possible for exercises to be held by Regular and Territorial units in combination on a greater scale.

To form a correct estimate of this year's training, we must judge it from the degree to which it has succeeded in attaining "the object of military training which is to prepare our forces for war." The probability or improbability of war does not enter into our consideration, except in so far as it is necessary to estimate the type of war which is likely to occur. That being well-nigh impossible, it is all important to consider what sort of war would threaten our existence as an Empire, and whether we are trained for that. A European war is the only one likely to do this since, by our Treaty obligations and for reasons of self-preservation, we could hardly avoid being drawn into it.

In such a war both the Regular and Territorial armies would have to reach the theatre of war in time—since it would be unsafe to rely on delay such as gave us a chance in 1914—and fight shoulder to shoulder, organized in corps and armies. A serious omission in this year's training, and for that matter in the last six years' training, becomes immediately apparent. The future commanders of these formations, as well as the present divisional commanders, are receiving no practice in the handling of troops, while the formations themselves have had no practice in fighting together. For this omission finance is this year to blame; the importance of avoiding a repetition of this want cannot be over-emphasized. There are very great difficulties in the way of achieving such training, but the security of the Empire demands that they should be overcome.

As regards the training of the divisions, they have been well trained for all except " great war " conditions, for which latter conditions their organization is unsuitable. The question of whether cavalry should not forsake their horses and take to light tanks is one which must be considered in view of the fact that it is unlikely that cavalry will be able to do more in another great war than they did in 1914, and that it is for such a war that we must primarily be prepared. Reconnoitring cavalry would, for instance, stand a poor chance against reconnoitring light tanks. Light tanks, on the other hand, are not yet capable of overcoming all obstacles. Armoured cars suffer from confinement to roads, and have been disappointing in the past. It is admittedly desirable to retain mounted regiments, but if we cannot have both, then the mechanized cavalry would appear to be the more essential, since infantry, carried mechanically, can replace cavalry in most other ways.

The mechanized formation's training showed how essential it is to make that formation permanent so that it can train together continuously. It also showed how vulnerable is the present division to attack by such a force, or even by light tanks alone. As these are comparatively simple to manufacture, any highly industrialized state could produce them quickly, if it had not already manufactured them secretly, so that formations incapable of defending themselves against them are taking an unjustifiable risk. Tanks also have trained for the most part in what is known as " good tank country." This, however, is the normal type of country throughout the north of Europe and vast tracts of Asia, in fact, in most possible " great war " areas. The tank has yet to be evolved however, which can move over any type of country. To establish the real limitations of existing models, it would be interesting to pit the mechanized brigade against the division in all types of country. This could only be carried out by continuing the next exercises in Scotland or in Wales. It is true that War Office tests of mechanized vehicles were carried out in May of this year in Wales, but these were purely mechanical and not tactical tests.

There seems little doubt that for " great war " purposes we can compensate for the small size of our army only by making it highly mobile, keeping it well equipped and by going ahead more boldly with mechanization. Standardization of vehicles and the training of commanders, staff and troops in their use—which differs so vastly from existing slow-moving formations—is possibly the most outstanding necessity shown by the year's exercises. Such standardization is also necessary from the point of view of development in many other directions, such as bridging, spares and shipping accommodation.

Generally speaking, the training season which has come to a close can be looked back on with satisfaction as regards the training of junior officers and men, but not without certain misgivings as regards the training of senior officers, as regards our present organization viewed in the light of " great war " requirements, and as regards the future.

There seems little likelihood that the Army Estimates will be increased before we get over the prevalent financial depression, the end of which, according to the most authoritative views, is not yet in sight. It is far more probable that estimates will show a further decline. Nevertheless, if it be agreed that the primary purpose of the Army is to maintain our security, it must be prepared for " great war " conditions, which means that its training, equipment and organization must be capable of being perfected in every respect for not more than £36,000,000 per annum. This would entail a change of policy laid down by the Cabinet, and a bold reorganization of the whole Army by the War Office. If, on the other hand, it is felt that national security is not so important, and that Imperial policing and minor expeditions are the only things which will be required of the Army, no change is necessary. It will be argued in this respect that this has been our traditional training. But can we allow tradition to be our guide for the future ? The process of building up the Empire by small wars is now over, and the present problem is to maintain what we have got, a task which must be accomplished as a last resource, as history shows, on the battlefields of Europe. It was there that Germany lost her colonial empire. A new condition, making this role all the more essential, is that whereas the Imperial door was open to foreigners and kept them contented, Imperial economic needs are now closing that door ; we can pursue such a policy only if we are capable of defending it, by force if necessary, in what could only become a great war.

# PROGRESS IN CIVIL AVIATION

By Lieutenant-Colonel F. C. Shelmerdine, C.I.E., O.B.E.

On Wednesday, 19th October, 1932.

The Most Hon. The Marquess of Londonderry, K.G., Secretary of State for Air, in the Chair.

[The Chairman expressed his regret that, owing to a very unforeseen circumstance, he would be unable to remain to hear the Lecture].

In introducing the Lecturer, he commented upon Colonel Shelmerdine's association with civil aviation. Colonel Shelmerdine, he said, had been connected with flying since 1915, and since 1927 he had been the first Director of Civil Aviation in India; in that capacity he had been responsible for the inauguration of the Indian State Air Service from Karachi to Delhi, and for planning the ground organization of the projected extension to Calcutta and Rangoon. In 1931 he was appointed to fill the vacancy caused by the death of Sir Sefton Brancker in the terrible disaster of the preceding year.

Lord Londonderry then left the meeting, the Chair being taken by Air Vice-Marshal Sir Vyell Vyvyan, K.C.B., D.S.O.

## LECTURE.

BEFORE beginning, I should refer to the fact that my predecessor at the Air Ministry, the late Air Vice-Marshal Sir Sefton Brancker, delivered before this Institution a series of lectures dealing with Civil Aviation at, roughly, two-year intervals. In December, 1925, he lectured on the Air Communications in the Middle East; in November, 1927, on Commercial Air Routes; and in October, 1929, on Progress in Civil Aviation. My lecture, although a year late in the series, is intended to review the continued progress made in Civil Aviation since the last-named date.

It would be impossible in the space of one hour to deal with progress throughout the world, or even throughout the British Empire; accordingly I propose to confine my remarks mainly to the scheduled regular services operated by Imperial Airways, Ltd., the commercial company subsidised by the British Government. More complete information on the progress of Civil Aviation throughout the world and within the British Empire can be found in the latest Annual Report on the Progress of Civil Aviation.

I shall divide my lecture into seven parts as follows: Subsidies; Continental services; The Service to India; The Service to Capetown; Feeder Services; Possible Future Developments; General.

## SUBSIDIES

Practically all scheduled regular air services throughout the world are to-day subsidised either directly or indirectly by the Governments concerned. There are only a very few isolated services, operating in very special conditions, without subsidy. In some few cases, States are operating their own air services. The methods adopted in different countries differ widely, but generally it may be said that the object of subsidies is to speed up progress, and in this country the aim in view in subsidising Imperial Airways, is to enable that Company to place air transport on a self-supporting basis at the earliest possible date. For this purpose, subsidies are being given on a scale designed at the outset to make up the difference between revenue and expenditure and to allow the Company to pay a reasonable return to the public who subscribe the capital. In calculating the necessary subsidy, liberal allowance is made for the obsolescence of aircraft, thereby making it possible for the company to introduce new and improved types at intervals of about four or five years. The subsidies which are paid to Imperial Airways are governed by agreements with the British Government covering a period of years. They are on a descending scale, so that as traffic develops and receipts increase, the subsidies payable decrease in like proportion.

Imperial Airways is entirely a commercial organization, on the board of which there are two Government directors, and its policy is unfettered by the Government, provided that the minimum services required by the agreements are carried out. There are now two such agreements in force; the earlier, dated 9th March, 1929, deals with the European services and the service to India, while the second, dated 26th October, 1930, deals with the service from Egypt to Capetown. Under the first agreement, which is operative for ten years from 1929, in so far as it relates to European services, the company received a subsidy of £125,000 per annum for the first two years, gradually decreasing in the following years until in the tenth year they will receive £30,000. In return, the company undertakes to complete in each year a minimum horse-power mileage of not less than 425,000,000 horse-power miles over certain specified routes. Actually speaking, during the year ended 31st March, 1932, the Company completed 865,347,975 horse-power miles.

The subsidy for the service to India is payable in respect of a weekly flight in each direction between London and Karachi, with the proviso that when sufficient traffic at remunerative rates becomes available the company shall increase the number of flights, with the ultimate object of establishing a regular service twice a week. In return the company received, in respect of the first two years of the Agreement, a sum of £210,000 per annum. This amount will gradually decrease until in the tenth year it will be £40,000.

The second agreement, which covers the service from Egypt to Capetown for a period of five years, provides for payment to the company of a sum of £240,000 in the first year, decreasing gradually to £120,000 in the fifth year. These sums are made up by contributions from the Imperial Exchequer, from the Union of South Africa and from the Colonies flown over. This is the first truly Imperial service in which various constituents within the Empire take a direct financial interest.

On all services, passengers, mails (including parcels) and freight are carried. Quite recently, an air mail postcard has been introduced at a substantially reduced rate, but it is still too early to say whether this facility will become widely used.

In connection with these subsidies, it is interesting to estimate the return which the public is getting for an expenditure which may appear high. Figures show that the cost to the public per traffic-ton-mile on the European services was 7s. 2d. in 1925, and has more or less steadily decreased until it reached a figure of 3s. 8d. in 1931; it is likely to be even lower this year. The corresponding figures on the London to Egypt service were 15s. 9d. in 1930, and 9s. 2d. in 1931. On the Egypt-India service, which was particularly costly to start, the figure in 1927 was as high as £2 3s. 6d., and is now 12s. 6d.

Before leaving this question of subsidies, it may be pointed out that in the United States, where direct subsidies are not paid, but indirect assistance is given by means of mail contracts, the losses incurred by the American post office in 1931 on domestic and foreign air mails amounted to £3,500,000 on a gold value exchange, that is, the revenue only amounted to 12 per cent. of the expenditure.[1]

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[1] Direct subsidies for the year 1931-32 were as follows (taking the exchange rates at par):—

| | | |
|---|---|---|
| Great Britain | £520,000 | including a contribution of £155,000 from the Dominion and Colonial Governments towards the service to South Africa. |
| France | £1,580,000 | |
| Germany | £920,000 | |
| Italy | £768,000 | |
| Holland, including East Indies | £175,000 | plus an indirect subsidy of approximately £135,000 in respect of the service to the Dutch East Indies. |
| Belgium | £163,000 | |
| Poland | £145,000 | |
| Czechoslovakia | £137,000 | |
| Spain | £68,000 | |
| Sweden | £36,000 | |
| Yugoslavia | £35,000 | |

## CONTINENTAL SERVICES

From the London Air Port at Croydon the following services have been operated by Imperial Airways during the summer of 1932 :—

A service three times a day in each direction between London and Paris.

A daily service to Basle and Zurich.

A daily service to Brussels and Cologne.

The number of passengers carried during the first eight months of this year increased by over 84 per cent. above the number carried during the corresponding period of last year, the actual figures being 12,359 and 22,749. This phenomenal increase can be attributed mainly to the introduction of the new " Heracles " class of aircraft, which has very greatly increased the comfort of passengers. In this type, which can carry thirty-eight passengers and a crew of four, great attention has been paid to the reduction of noise, so that it is possible for passengers to converse freely without raising their voices. The aircraft is well ventilated, luxuriously fitted, stewards are carried, and meals provided. The results achieved are even more remarkable, when it is realised that during the first six months of the year traffic to the Continent by rail and steamer had fallen from 706,050 to 383,212 ; this clearly shows that the advantages of air transport are being recognized by an increasing number of persons travelling on business or pleasure. This air service is no longer dependent on tourists for its peak loads, their place being taken by ordinary fare-paying passengers.[1]

Apart from Imperial Airways, there are four foreign companies operating regular services to and from the London Air Port at Croydon. These are :—

(1) The French Company, Air Union—operating three times a day between London and Paris with through connections to Lyons, Geneva, Marseilles and Cannes, once a day in each direction. In addition, the Company operates a daily newspaper service between London and Paris and a service between London and Berck three times a week.

[1] When the London-Paris service was started in 1919, the fare was £21, travel being by a 2-seater converted military machine. The fare is now £5 5s.—and the service is operated with 38-seater aircraft. In 1919 air mails were carried at a surcharge of 2s. 6d. per ounce ; the present flat rate is 4d. per ounce from London to all European countries.

The fares to Cologne and Zurich are respectively £5 10s. and £8 5s., while the first-class fares by surface transport are :—

Paris, £4 1s. 10d. ; Cologne, £5 8s. 6d. ; Zurich, £6 12s. 1d.

(2) The Dutch Company, known as the K.L.M.—operating twice daily between London and Rotterdam, and daily between London–Amsterdam–Copenhagen and Malmö.

(3) The German Company, Deutsche Luft Hansa,—operating a daily service between London–Amsterdam–Hanover to Berlin and a night service for mails and goods between London–Cologne–Hanover to Berlin.

(4) The Belgian Company, known as the Sabena—operating daily services between London and Brussels, London and Düsseldorf, *via* Brussels and Cologne, and London–Ostend–Zoute.
(During the winter months, this Company operates, jointly with Imperial Airways, a daily service between London–Brussels–Cologne).

The total number of passengers carried on all air services, British and foreign, to and from Croydon, continues to show a very marked increase. The number in 1931 was 45,742 : an increase of over 20,000 when compared with the corresponding figure five years ago. The percentage carried on British machines was 48 per cent. of the total. There is also a considerable transport of goods, air transport being now the recognized method of conveying bullion and specie from England to the Continent. During 1931, the value of bullion and specie imported was over £1,100,000 and the value of the amount exported and re-exported was over £37,000,000. The value of other goods imported by air into Great Britain was over £2,000,000 in 1931 and the value of exports and re-exports by air was over £750,000.

The receipts from aircraft using the Air Port at Croydon, which may be called dock dues, and from rental of offices, etc., amounted in 1931 to approximately £25,500.

## THE SERVICE TO INDIA

Before dealing with the service to India, mention should be made of the International Air Convention and the Permanent Commission set up under that Convention, known as the International Commission for Air Navigation and more commonly called the I.C.A.N., as these have some bearing on the difficulties experienced in organizing and maintaining this Imperial route. The Convention was signed in Paris in October, 1919, and thirty states are now parties to it. One of the primary objects of the Convention was to facilitate international flying, as is illustrated by Article 2, which provides for freedom of innocent passage by aircraft of contracting states over the territory of another contracting state. The last part of Article 15, however, provided that the establishment of

international airways shall be subject to the consent of the states flown over. The precise interpretation of this sentence has been the subject of much international discussion. On the one hand, some states, including ourselves, have contended that the use of the term " airways " and not " air services " clearly indicates that the latter are not subject to permission but that the consent of the states flown over relates only to the establishment of the ground organization which constitutes the airway. They have also argued that it would be inconsistent with Article 2, previously mentioned, to make an air service subject to authorizations. Other countries, however, have maintained that the sentence is intended to make operation of air services definitely subject to the permission of the states flown over and that no other interpretation can be admitted. The discussions came to a head at an extraordinary session of the International Commission for Air Navigation held in Paris in July, 1929, which was attended by representatives of a large number of contracting and non-contracting states, the latter by special invitation. The British representative pressed the matter to a vote, with the result that twenty-seven states considered that no air line should be established without the authorization of the states flown over. Only four votes (the British Empire, the United States, Netherlands and Sweden) were recorded in favour of freedom of the air over the established air routes.

The restricted interpretation of Article 15, therefore, is now generally accepted with all the disadvantages which follow in its train. Before an air service crossing several states can be inaugurated, no matter whether or not a ground organization is required, an agreement with each state must be negotiated and a *quid pro quo* varying in nature granted in the form of reciprocal concessions. It is to be hoped that such artificial barriers to the natural development of commercial aviation will gradually be broken down and that complete freedom will eventually be possible.

The first Empire route to be organized and put into operation was that between England and India. This route was developed by stages, the Middle East section being opened first. Under an earlier agreement with Imperial Airways, the company were to have commenced a fortnightly service in each direction between Cairo and Karachi at the end of 1926. Unfortunately, the Persian Government refused to ratify their earlier permit for the service to operate along the Persian coast of the Persian Gulf and it was therefore necessary to make Basrah the terminus. The pioneer work on the desert air route was carried out by the Royal Air Force, who for several years operated a regular service between Cairo and Baghdad for the carriage of mails and official passengers. Similarly, the route along the Persian Gulf was originally explored by the Royal

Air Force; landing grounds were subsequently selected and laid out at the expense of the British Government.

The service between Cairo and Basrah was operated until 1929, being increased to a weekly service in 1927; but it was not until April, 1929, that we obtained a three-year permit from the Persian Government for flights along the Persian coast. The through service from England to India was opened at that time, the first machine leaving Croydon on 30th March, 1929. Passengers were carried by land machines from London to Basle, by train from Basle to Genoa, by seaplane from Genoa *via* Naples–Corfu–Athens–Crete–Tobruk, on the North coast of Africa, to Alexandria, thence *via* Gaza–Rutbah Wells–Baghdad to Basrah. From Basrah *via* Bushire–Lingeh–Jask–Gwadar to Karachi.

In the winter of 1929-30, a Central European route was, for a variety of reasons, operated in lieu of that *via* Italy, joining the original route at Athens. It was, however, found that regular operation could not be maintained through the winter months, so that a route *via* Italy was resumed after satisfactory arrangements had been made with the Italian Government. Brindisi was made a port of call and the stop at Tobruk eliminated. This route was operated until the winter of 1931.

After the commencement of the African service in February, 1931, one machine carried both the Indian and African mails between Genoa and Alexandria, whence the routes diverged. This had the disadvantage that on the homeward flight a delay on either service affected both. It was therefore decided to operate entirely separate services from Brindisi onwards. To make this possible with the existing fleet of flying boats, it was necessary to discontinue operation by air between Genoa and Brindisi.

The whole of the Paris–Brindisi section was subsequently operated by train. This arrangement is no drawback since much of the journey is done by night so that adverse weather conditions do not affect regularity, whilst it enables the Indian service to be operated on a shorter route *via* the Sea of Galilee. The African route remains as before *via* Alexandria. The Indian service now leaves London on Saturday and the African service on Wednesday. The route to India is now: London to Paris by aeroplane; Paris to Brindisi by train; Brindisi to the Sea of Galilee by flying boat; and from Semakh, the aerodrome adjoining that lake, by land machine to India. After leaving Brindisi, calls are made at Athens, and in the summer at Rhodes and Cyprus (Limasol), and in the winter at Castelrosso, a small Italian island off the coast of Asia Minor. Owing to the absence of sheltered water, it is not possible to call at Cyprus during the winter months, but it is hoped to raise the level of

an inland lake near the port of Limasol and make it available for the use of flying boats throughout the year.

This Mediterranean section is operated with 4-engined "Scipio" type flying boats, carrying eighteen passengers and a crew of four. The night stops are at Athens and Galilee. After Galilee the next two nights are spent at Basrah and Shargah. The section between Galilee and India is operated by 4-engined land machines of the "Hannibal" type, seated for twenty-two passengers and carrying a crew of four.

Our three year agreement with the Persian Government expired on 1st April of this year, but it was renewed until 31st May and subsequently until 1st October. The position, however, was so unsatisfactory, and the chances of obtaining a long term agreement were so remote, that it was decided to transfer operations to the Arabian side of the Persian Gulf, using landing grounds at Bahrein, Yas Island (if required) and Shargah, whence flight would be continued to Gwadar and Karachi. The transfer was effected for the service which left Karachi on 5th October and the whole of the equipment previously held by Imperial Airways at the Persian ports of call is now being removed to the Arabian coast, and a rest-house will shortly be completed at Shargah. Wireless stations have been provided at Bahrein and Shargah to take the place of those formerly at Bushire and Jask. The whole re-organization has been fraught with difficulties, mainly due to the uncivilized nature of the country traversed and to the reluctance of local Sheikhs to permit the landing of aircraft in their territories. It is hoped, however, that the civilizing influence of a commercial air route will before long produce beneficial results and allay all suspicions.

The passenger traffic on this route shows a satisfactory increase, and although there is not a large number of passengers undertaking the through journey between England and India, full loads are obtained on many of the intermediate stages. Mail traffic has not shown the increase expected. The weight of mails despatched from England to Palestine, Iraq, India and beyond is from 900–1,000 lbs. per week, including about 600 lbs. routed through to India. The homeward mail from India to England also averages about 600 lbs. a week. These figures do not take account of mail picked up *en route*. As soon as the service can be extended eastwards beyond Karachi, the volume of mail traffic should show a very substantial increase.

Imperial Airways have recently organized local weekly services between Egypt and Palestine, and Palestine and Iraq. The former affords a connection between the African and Indian services and also provides facilities for persons wishing to visit the Holy Land; the latter

also gives an alternative air connection with various steamer services operating in the Mediterranean.

## THE SERVICE TO CAPETOWN

Pioneer work on the Egypt–Capetown service was commenced as far back as December, 1918, when three Royal Air Force ground survey parties were despatched from Egypt with the object of selecting aerodromes and of organizing generally the air route from Cairo to the Cape. Thereafter, in February, 1920, a number of attempts were made to fly from England to Capetown, the first successful through flight being accomplished by Sir Pierre van Ryneveldt and Sir Quintin Brand, who left England on 4th February and reached Capetown, not entirely without incident, on 20th March. But a considerable period elapsed before a regular commercial service along this important Empire route could be developed, although in the meantime the Royal Air Force carried out periodical flights between Egypt and the Union, thus keeping open this route and acquiring much useful information.

Early in 1927, an experimental air service was established between Khartum and Kisumu, being supported financially by the Sudan Government and the Colonies of Kenya and Uganda. Unfortunately it was attended by an almost unbroken chain of misfortune, including damage to aircraft. Eventually Sir Alan Cobham, then on his way round Africa, assisted Messrs. Blackburn and Gladstone to complete their contract by carrying out two reconnaissance flights between Khartum and Kisumu.

The development of the London–Capetown service has not been achieved without considerable difficulties. The high altitudes and the climatological conditions make the route difficult to operate. There were also difficulties in the W/T work caused by atmospherics which called for special measures, so that the meteorological organization is not yet entirely adequate, though improvements are being carried out stage by stage.

On 28th February, 1931, the first regular air mail left England for East Africa (Tanganyika) under the five year agreement with Imperial Airways. From Cairo the route was flown by landplanes to Khartum and thence to Mwanza on Lake Victoria by flying boat. This preliminary service was continued until January, 1932, when the through weekly service to the Cape was inaugurated.

This service is operated from London to Brindisi in the same manner as the Indian service. From Brindisi it proceeds *via* Athens and Crete to Alexandria, that section being flown with 4-engined "Scipio" type flying boats, carrying eighteen passengers and a crew of four. From Alexandria

to Cairo, which is reached after dark, passengers are conveyed by train in order to save time; and from Cairo the route proceeds southwards to Khartum, this section being flown by land machines of the " Argosy " type. From Khartum to Kisumu, flying boats of the " Calcutta " type are used, while from Kisumu onwards, to the Cape, land machines of the D.H.66 " Hercules " class are employed.

Experience has led Imperial Airways to decide upon the replacement of the existing mixed fleet of aircraft by a new 4-engined monoplane, known as the " Atalanta " type, with a carrying capacity of nine passengers and crew of four and a cruising speed of 118 m.p.h. When these new machines have been placed on the service, the whole route from Cairo to Capetown, a distance of 5,871 miles, will be operated by the same type of aircraft, flying boats being no longer used on any section. The change-over is obviously desirable from many points of view. The new machines are now in course of delivery, and the inaugural flight will take place very shortly. Eventually it is hoped to reduce the time occupied on the journey from London to the Cape from 10½ to 9 days.

The present route through Africa is as follows, but it may be subject to slight alteration as a result of operation with the faster machines :—

1st day . . . Cairo to Wadi Halfa, with halts at Assuit and Assuan;
2nd day . . . Wadi Halfa to Khartum, with a halt at Atbara ;
3rd day . . . Khartum to Juba, with stops at Kosti and Malakal ;
4th day . . . Juba to Nairobi, with stops at Kampala and Kisumu where a change is made from flying boat to landplane ;
5th day . . . Tanganyika is traversed as far as M'beya, with stops at Moshi and Dodoma ;
6th day . . . across Rhodesia, the night being spent at Salisbury, after stops at M'pika and Broken Hlll ;
7th day . . . into the Transvaal, the night being spent in Johannesburg, after stops at Bulawayo and Petersburg;
8th day (10½ days after leaving Croydon) . . . to Capetown, after stops at Kimberley and Victoria West.

The through flight is stated to be one of peculiar interest, as the route passes over most varied country, while the arrangements for the comfort of passengers at the different night stopping places are complete and very satisfactory. Being as yet in its infancy it is too early to forecast its prospects of commercial success, but the results achieved up to date are most encouraging.

The main difficulty hitherto experienced in the operation of this route has arisen from the state of aerodromes after heavy rain, a condition impossible to foresee beforehand, as the aerodromes had previously been used only by aircraft of light or medium weight. The provision of

runways where necessary is now well in hand, but owing to the remote situation of the aerodromes, the construction of such runways is both expensive and lengthy. In Northern and Southern Rhodesia, valuable financial assistance is being received for this object from the Beit Trust.

The value of the service, more particularly to the intermediate countries flown over, viz., Sudan, Uganda, Kenya, Tanganyika and the Rhodesias, becomes self-evident when the normal time of transit by land and sea is compared. The following are a few examples :—

| | | | | |
|---|---|---|---|---|
| 5—7 | days | gain | for | North Sudan. |
| 6—17 | ,, | ,, | ,, | South Sudan. |
| 12—24 | ,, | ,, | ,, | Uganda. |
| 8—23 | ,, | ,, | ,, | Kenya. |
| 8—24 | ,, | ,, | ,, | Tanganyika. |
| 9—12 | ,, | ,, | ,, | Rhodesia. |

I have now dealt with our two main Imperial routes.

The policy has been for the Royal Air Force to blaze the trail and carry out experimental flights and then to hand over the routes to be organized for commercial purposes. This survey work of the Royal Air Force has been of the greatest value, but it is one thing to fly with Service aircraft on exploratory work of this sort and quite another to organize and maintain a regular service running to schedule, carrying passengers, mails and goods. The pilots of Imperial Airways, all men who have served either in the Royal Air Force or in the Air Force of one of the Dominions, are doing admirable work and show a high sense of duty and resource, often under most trying conditions ; in fact they are setting up a tradition which need not fear comparison with that maintained by our Mercantile Marine.

## FEEDER SERVICES

The existence of our Imperial trunk air routes should give great opportunities for the organization of feeder routes to link up outlying districts with a main route. This is more particularly the case in the route from Cairo to the Cape, which, South of the Sudan, traverses British territory throughout. One such feeder route has now been established between Elizabethville (Belgian Congo) and Broken Hill (Northern Rhodesia), where it connects with the England–South Africa route. Letters are conveyed on this feeder route at a charge of 6d. per ½ oz. over and above the standard rate for Rhodesia, the time of transmission to Elizabethville being nine days, which offers a very substantial gain. It is hoped shortly to inaugurate other feeder services between Salisbury and Blantyre (Nyassaland) and Salisbury and Beira (Portuguese East Africa). The former will connect the Nyassaland

Protectorate with the main trunk route and the latter will afford connection with one of the most important ports on the East coast of Africa.

In India, a feeder line, or an extension, was started recently by an Indian company, which will run from Karachi to Madras *via* Ahmedabad, Bombay and Bellary, in connection with the main line service to Karachi. The extra charge for this service is 2d. per ½ oz. and the saving in time is two days as compared with letters sent by air only as far as Karachi. There is little doubt but that the extension of the main trunk line across India, will bring other feeder services into being.

## POSSIBLE FUTURE DEVELOPMENTS

In considering possible future developments, one must bear in mind the exigencies of the moment and the extreme difficulty of financing any new undertaking. It has long been the desire of the British Government to see the present route to India, which now terminates at Karachi, extended across India through Burma, Malaya and the Dutch East Indies, to Australia. This must be our first objective. The ground organization already exists, though it will require expansion and improvement in many directions as a result of experience. Negotiations are in hand, with a view to extending the service by means of joint operation by an Indian company and Imperial Airways over the section Karachi–Singapore. From Singapore to the North of Australia and thence to the cities of the South, it is hoped that the service will be undertaken by Australian interests. At this stage, it is impossible to be more precise, but I can say that it is confidently hoped to inaugurate a through service of this nature during 1933.

Then, there is the possibility of a link between Hong Kong and Rangoon, *via* French Indo-China, operated in connection with the main trunk route to Australia.

Turning to the West, we have always before us the possibility of a Transatlantic air mail service, and we are giving serious attention to the many problems involved. There are at least three routes which could be taken, but each has its disadvantages. The Great Circle Route *via* Ireland and Newfoundland is, of course, the shortest and has the added advantage of being on the shipping lanes. Politically, too, it offers advantages because its organization would remain in Imperial hands. On the other hand, although it is the shortest route, it involves a sea crossing of 1,942 miles. Meteorological conditions are bad, especially during the winter, and the possibility of accurate forecasts is at present small. Consequently, it would probably be necessary to rely almost entirely on instrument flying.

Then there is the sub-Arctic route *via* Greenland and Iceland, about which there is considerable difference of opinion. On the face of it, there are certain obvious advantages. It is very little longer in distance and time than the Great Circle route, whilst avoiding the long sea crossing. Other conditions being favourable, it could be divided into economic stages of about 500 miles each, thereby allowing reasonable pay loads to be carried. It would, however, be necessary to have a very elaborate and very expensive ground organization for operating and maintenance, for meteorology, and for wireless, in order to maintain the service through Greenland and Labrador. Even then, I am very doubtful whether regular operation throughout the year would be possible.

The third possible Transatlantic route, to which attention has been directed, is the southern route *via* Lisbon, the Azores, Bermuda to New York. Its only advantage over the Great Circle route is that it offers better weather conditions. It is the longest route and involves a long sea crossing of 2,079 miles from the Azores to Bermuda. As in the case of the Great Circle route, a long range seaplane would be necessary with ample accommodation for crew and sufficient carrying capacity to allow an economic pay load in addition to the large quantity of fuel which would be required.

Another suggestion is to fly westwards by a still more southerly route *via* Cape Verde Islands to West Indies, taking advantage of the prevailing following wind, and to fly eastwards by the Great Circle route, where the prevailing wind is westerly.

Consideration is now being given to the establishment of an air port at Bermuda and to the possibility of an air service between Bermuda and New York as a preliminary to a Transatlantic Service.

The Dominion of Canada is, of course, intensely interested in the development of the Great Circle route. When that route has been established, as no doubt it will be, and the Transcontinental route from Montreal to the West is in operation, it may well be that a further extension across the Pacific will make this the shortest route from Europe to the Far East.

## GENERAL

Such is the present state of the development of our Empire air communications. Of the value of these communications there can be no doubt. In this country, the weekly arrival and departure of the air mails from and to India and Africa passes practically unnoticed, but in India and in the African colonies the air mail is a weekly event in which eager interest is taken. To those living in the remote areas of the Empire served by these routes, the speeding up of communications and this approach of civilization means a very great deal.

Criticism is often levelled at the policy adopted for the organization of our Empire air routes. In answer to such observations I have put forward the reasons underlying that policy. The main object in giving subsidies is to place air transport on a self-supporting basis as soon as possible. If this is to be done, it follows that operating expenses must be kept as low as possible and that the greatest possible paying loads must be obtained. For that reason, these services cater for passengers, mails, parcels and freight. It is frequently said that mails should be kept entirely separate and that they should be carried at a far greater speed than is done to-day. There is much to be said for this view, for so long as passengers are carried, the extent of the daily stages must be governed by the facilities available for their accommodation at night, with some regard for their comfort. If mails only are carried, this consideration does not arise, for, if necessary, the pilot of a mail machine can make shift for himself at a landing ground where no regular accommodation exists. Higher speed presents no difficulty but it means increased cost. To-day, Imperial Airways have a modern fleet of large aircraft. They are not working to full capacity, so that if the mails were separated from other traffic and high speed mail carriers were employed for their transport, this would involve taking from the existing machines a substantial part of their paying load and incurring the additional heavy expenditure of separate conveyance. It is obvious that such a course would defeat the object which we have in view.

## DISCUSSION

Mr. L. Wingfield: Asked the Lecturer whether the time would ever come when it might be possible to put a 1½d. stamp on a letter and send it by air mail, just as a 1½d. stamp is put on a letter to-day for despatch to any British colony.

He also wished to know whether the rate of 6d. a mile for private passenger services, was a paying rate or not, whether it covered the costs of operation or not.

Lieutenant-Commander C. N. Colson, R.N.: Asked how many taxi services were being run at the rate of 6d. per mile, or 3d. for each passenger.

## THE LECTURER:

Although we are working to get a reduction in air mail rates as quickly as possible, I cannot see any possibility, at any rate for a considerable number of years, of air mail being carried at the same charge as is levied for their carriage by surface transport. I think that, at any rate for some years to come, if the public want speed they will have to be prepared to pay for it at a rate in excess of the rate which is charged for the carriage of mails by normal methods.

I have been asked whether air taxi services at 6d. a mile can be a profitable operation. My personal opinion is that this is extremely doubtful, but I can hardly conceive any business firm that would attempt to operate at that rate if

they did not find it profitable. Possibly it is rather early to say whether that can be considered to be a remunerative rate or a rate which can cover the cost of operation provided that the machines are properly maintained in every way and that the staff are properly qualified for their jobs and properly paid for carrying them out.

THE CHAIRMAN:

AIR VICE-MARSHAL SIR VYELL VYVYAN: Civil aviation is a fascinating problem to deal with. Personally, I think we are on the eve of considerable expansion, due mainly, as the Lecturer says, to the comfort provided in the newer machines.

As a director of Imperial Airways, I should like to pay a tribute to the help which we always receive from the Air Ministry, for we always go to them with our political troubles—and a very large part of our troubles in extending our services over the world are, as the Lecturer has told you, political—and secondly, to the Royal Air Force, who always go before us and do wonderful work in surveying routes ahead and provide, of course, a reservoir from which we draw our pilots as our expansion goes on.

The aim of Imperial Airways is to be first in the world as regards safety, security and reliability—a service on a par with the British Mercantile Marine. The Mercantile Marine throughout the world is free, and can go where it likes without restriction. Unfortunately that is not the case in the air at present, although in time it may be so.

Criticism has been levelled at Imperial Airways mainly on two grounds; the first is that we do not create enough new services; and the second, that we do not fly fast enough. With regard to the first, so far as scheduled services are concerned the more you fly the more you lose. It is quite possible that in certain circumstances you can make flying pay; that is to say, if you only fly when it is profitable to do so; but to keep your aeroplanes on the mov you must have a fair amount of traffic to make it pay. With scheduled services, on the other hand, which must be run whether there is a load or not, the time has not yet come when they pay their way. Science is helping us; costs are coming down and traffic revenue is going up. A time will come when those will meet, and then no subsidy will be required; but when that will be we cannot foresee just yet.

Secondly, the fact remains that speed costs money. The new 'Atalanta" class of aircraft will not bring in anything like the revenue of the "Hannibal' class, because they are fast machines and do not carry the same paying load; therefore, economically, they are not nearly such a good proposition as the slower "Hannibal" class. We shall lose on that extra speed.

With regard to speed, it is interesting to recall that when the first public mail left London for the Cape in 1814—that is to say, the first mail by which the public could send their letters, it was sent in a sailing ship called the "Eclipse," which took 114 days to reach the Cape, and the charge was 3s. 6d. per quarter ounce. We have travelled a little since those days.

I am certain the African route will be a wonderful route in the course of time, and I anticipate and hope the day will come—though I do not know when that will be—when there will be a daily service to the Cape and a daily service to Australia. When those are in existence they will pay for themselves, and practically all the mails will go by air; but the time is not ripe for that yet.

The customary votes of thanks to the Lecturer and to the Chairman were carried by acclamation.

# "THE WEAPON OF THE WEAK"

## A FRENCH VIEW

By Rear-Admiral R. Castex, Commandant du Secteur Maritime de Toulon.[1]

Admiral Richmond's most interesting article on "The Weapon of the Weak" in the August number of the Journal suggests certain points which I should like to place before his readers. But I wish to make it clear that the views I express are purely personal and do not commit the French naval authorities in any way.

At the outset, to state that the submarine is "the weapon of the weak" is not altogether accurate. Britain, for instance, made extensive use of these craft in the North Sea during the Great War; a fact which seems to indicate that they are equally of use to the strong. But, in my opinion, there can be no question that the submarine is particularly necessary to the weak, because inferiority in surface craft makes it essential to act on the defensive. Nevertheless, the belligerent who is compelled to adopt a defensive role, whether at sea or on land, must above all avoid a passive defensive. In spite of his disadvantage, he must strive continually to be active and aggressive, while avoiding or delaying a decisive action. Consequently, in naval war he must endeavour to deny the enemy the peaceful enjoyment of sea communications by means of operations which will keep their control in a state of suspense and dispute, and may ultimately even deny their use by the opponent.

It is this idea of continually harassing the enemy, which must be the preoccupation of an inferior navy. As Kempenfelt demonstrated in the XVIIIth century, the policy should be one of refusing battle, while worrying the enemy by the pressure of offensive action with a limited objective at every point and by every means whenever a favourable opportunity presents itself.

At sea, the defensive should take the form of a constant endeavour to counter-attack, and of readiness to exploit every geographical and tactical feature peculiar to the theatre of operations. These counter-

[1] Admiral Castex has been appointed Commander of the School of Naval Warfare to date 25th November.

attacks will, of course, be no more than secondary offensives with no excessive pretentions, and reflecting throughout the subordinate position which the defensive must accept however aggressive its intentions. To quote Corbett's apt definition, they remain "minor counter-attacks." They will be directed against exposed detachments of the enemy's fleet, or failing that, against his communications, merchant shipping or coasts. No target comes amiss provided it harms the enemy, whether in a military, economic or moral sense. Attacks on communications or coast lines can, indeed, produce important results not only on account of their direct value but because, in the end, they will probably lead the enemy to disperse his forces in an endeavour to protect everything. This may enable his fleet to be engaged under favourable conditions.

Such are the rules for the defensive game of the weak Power. True, they are more easily defined than put into practice; nevertheless they were found in the past to be possible, and that in days when only surface craft existed. Action against enemy shipping, the classic *guerre de course*, is essentially a type of the minor counter-offensive. It has been used since time immemorial by the weak Power. History is full of examples of it. It was employed successively by the French monarchy of old, by the governments of the Revolution and of the Empire, by the Confederate States, and by the Germans between August and December, 1914. Nevertheless, it was always a secondary operation aimed at an enemy whose superiority in surface craft made it impracticable to challenge him to a fleet action.

But what was a difficult task for a weak Power with only surface craft, has become a much easier problem to-day, because new weapons have opened up a vast field of enterprise for minor counter-offensives. Here is where the submarine comes in, for this type of craft endows the weak Power with possibilities never possessed before. To begin with, the submarine is far less dependent on a shore base than other warships; it is far more self-contained, and its refuge is ever to hand beneath it and available as a means of escape when hard pressed by superior forces. Thus it enjoys freedom of action such as the surface ship has never known. It cannot be forced to retire. In spite of the fleet of the superior Power, the submarine can keep the sea: a fact of some importance.

In effect, therefore, many activities and many areas, denied to surface craft, are open to the submarine, and it is particularly well suited to engage in those subsidiary operations which previously had little chance of success in the face of a fleet which predominated the surface. It is eminently suitable for the operations of attacking the enemy's fleet or shipping. With submarines a weak Power may be able to make itself felt, where, previously, it would have been reduced to impotent inactivity.

During the late War, the Germans demonstrated the potentialities of the submarine, except that, in future, it will be necessary to avoid their inhumanity, their political mistakes, and their failure to support their under-water craft with their surface fleet. Since then its capabilities have been further increased by the production of under-water craft of heavy displacement, armed with powerful guns, and having a great radius of action and, therefore, able to operate efficiently against communications in distant waters and against the enemy coastline by bombardment.

For attacking communications, the submarine provides a weak Power with new resources, the development of which will be very interesting. It will enable action to be taken on the far side of surface obstacles, and in spite of them. The Germans could not risk their fleet further out than the middle of the North Sea ; but beyond that limit they used their submarines—the only weapons capable of exercising the desired pressure on the Allied communications. Britain, which by an extraordinary chance was the " weak Power " in the Baltic and in the Sea of Marmora, owing to the Danish Straits and the Dardanelles, was glad to avail herself of submarines for use in those waters. This striking example appears to justify my present argument.

The attack of communications will always be an object of particular interest to a weak Power because of their direct importance to the life of the hostile nation. Even though such a Power cannot hope to secure a complete decision by this form of action, nevertheless it will provide a means of inflicting serious damage on the strong Power through the dislocation of commercial and military traffic which it will produce. Moreover, from a purely military point of view, it will have the effect of immobilizing considerable enemy forces, such as destroyers, patrol vessels, aircraft, etc., which will have to be withdrawn from the surface fleet in order to meet this attack.

Clearly, in any future war, the attack of sea communications by submarines will not take the same form, nor will it produce the same results as in the German campaign of 1914-18, because it will be necessary to take into account numerous restrictions which the Germans disregarded ; restrictions, the importance of which, it may be noted, public opinion in France does not fully appreciate. In the first place, the rules of international law regarding the destruction of shipping and safety of life will have to be respected. Secondly, it will not be possible to sink any ship that comes along by torpedo or gunfire, without visit and search, as the Germans did. This might perhaps be done in the case of ships in convoy, since this is really a military formation, but not in the case of isolated ships ; to do so would be to injure neutral interests which would involve diplomatic difficulties and array the whole world against the

offender. On the other hand, visit and search will expose a submarine to grave risks when dealing with an enemy merchant ship which is armed; which means that she will often have to refrain from attacking. Lastly, let us remember that under Article XXII of the Treaty of London, 1930, submarines—quite wrongly to my mind—are bound by the same rules as surface warships in regard to the destruction of shipping.[1]

These facts all go to show that the results of a future submarine campaign will, except in special cases, be far more limited than they were in the last war. Nevertheless, such a campaign should be well worth undertaking, and the weak Power should employ the submarine to attack seaborne commerce to the utmost possible extent short of involving serious political consequences. Against the enemy fleet itself the submarine will, naturally, enjoy full freedom.

The "minor counter-offensive" of the weak Power will, therefore, provide scope for the extensive use of submarines. In fact it will be mainly an under-water campaign but organized in close association with the activities of surface craft.[2] The same principle holds good for the employment of aircraft, the offensive use of mines, etc. It is evident that, thanks to all these modern weapons, the weak Power now has the means to impart to its minor counter-offensive a vigour which was not possible in the past. We see, too, that the difference in outlook which used to exist between an offensive and a defensive attitude is now tending to become less and less, at any rate in outward appearance.

But what actual results may a weak Power expect to achieve in this defensive game backed by the submarine? They will be inadequate from the point of view of practical and material achievement, in the sense that by these means, the weak cannot succeed in destroying the preponderant position of the strong. Submarine operations, like any other minor counter-offensives undertaken when on the defensive, are only small partial offensives; limited and conditional; second or third class offensives; makeshifts and expedients. They create an illusion, and nothing more. To obtain better results, to bring about a complete reversal of the situation, to secure a definite decision, the weak Power would have to be able to undertake a real offensive—a "major" offensive. This would entail launching the whole surface fleet, without any reser-

[1] It should be noted that Powers, other than the five nations who signed the Treaty of London, have retained full freedom to use their submarines against shipping, and that they are, therefore, in a more favourable and more logical position.

[2] We are not discussing here the role of the submarine in coast defence. In that sphere it produces the poorest results on account of its limited mobility. The weak Power should appreciate this fact and utilise its submarines mainly in offensive operations.

vation, against that of the enemy. But the weak Power cannot go to such extremes. Therefore, it must pursue a middle course.

It must be emphasized that, as the Germans found, a submarine campaign against enemy communications cannot, by itself, secure the mastery of the seas, any more than the *guerre de course* could in days gone by; it cannot give the weak Power control of essential surface communications or wrest control of them from the strong Power. The master of the surface will continue to have the last word in this matter.

True: but how much more difficult it is going to be for the latter than it was in the past. He will suffer many losses. He will be hampered in his own operations and have to resort to many more precautions. His plans will frequently be upset. He will find himself obliged to make exceptional efforts—onerous and costly, to provide the personnel and material necessary for patrols, escorts for convoys, mine-sweeping, etc.; all of which means immobilizing extensive forces. In a word, the strong Power will no longer enjoy the secure and peaceful possession of the surface to anything like the same extent it could in former days.

The weak navy will be defeated in the end—that goes without saying; but it will be able to put up a stronger and a longer fight than of old. As the French expression has it, " it will sell its skin more dearly." And it will be the submarine which will, to a great extent, have provided the means for securing this more favourable state of affairs, and which will have endowed these minor counter-offensives with a greater importance. " They add to the difficulties," say Admiral Richmond; that is, indeed, the essence of the new situation for the strong. Is it to be counted as nothing, then, that there is for weak Powers this weapon which can secure for them such important results, even though they may not be decisive?

Now let me refer to the historical examples quoted by Admiral Richmond, and give the conclusions at which I have arrived from them.

To begin with, I agree that, in 1898, submarines would not have prevented Spain from being defeated by the United States; they would not have saved Cuba from being captured. But they would have enabled Spain to inflict serious losses on the American fleet and merchant shipping. Their appearance on the East Coast of the United States would have brought to a climax the panic which was created by the sailing of Cervera's squadron. The mere presence of these weapons would, by such repercussions, have completely upset the plans of Mahan's " strategical board." They would have complicated the whole situation and delayed the final result. Spain would have been able to hold out longer and hit back; she would not have surrendered at the end of two months war. She could have made things much more difficult for the Americans.

Again, in 1898, if Greece had possessed submarines she could not have invaded Crete, which would still have been covered by the fleets of the great Powers; that I grant. But she could have engaged in submarine reprisals against these nations in the Eastern Mediterranean, which would have caused the great Powers serious inconvenience. In a war of this kind, the Greeks would inevitably have been defeated; but they would have shown that they knew how to defend themselves, and the great Powers would have had to realize that Greece must no longer be regarded as a mere cypher.

In 1890, if Portugal had had submarines, she could not have opposed British colonial ambitions in Africa, much less could she have aspired to ultimate victory if war had broken out between the two countries. But they would have enabled her to resist for a time, returning blow for blow, and that would have been better for her than surrendering to the first British demand.

So much for material results.

From the standpoint of morale, an active defensive, as represented by minor counter-offensives—particularly by submarines—is specially valuable. It promotes the offensive spirit, initiative, and the will to give battle. The submarine enables the weak Power to preserve the moral advantages of mobility in spite of the enemy, and reduces the oppression due to inferiority on the surface. Thanks to the submarine, and other new weapons such as aircraft, it can remain active even under the domination of a superior enemy fleet; it can keep the sea, manœuvre, create new opportunities within the limitation of its resources; it need never sink into that condition of depressing inactivity which awaits those incapable of a true offensive. The weak Power can, now, to a greater extent than ever before, realize the doctrine of Bernhardi, "be ever active, always attempting some new enterprise, never be driven into a position of unavoidable necessity, nor into a state of anxious suspense."

Material results may not be great; in any case they will not be decisive. But moral effects will be appreciable. First of all, because honour will be preserved and courage revived; then, later, prestige and respect will be acquired, the effects of which may be of considerable importance. To quote Bernhardi once more: "war is not always waged purely for military or political success; often there are moral and national issues which only a conflict can safeguard and which will only be manifest in the future." For instance, we French love to recall the great exploits of our old privateers; they are still a source of inspiration. On the other hand, you English know full well, as we do also, that our *guerre de course* by itself could never redress the balance of power in our favour while we were so inferior in strength to Britain at sea. But

did we not command your respect, even your sympathy, for our efforts, despite our disadvantages, to defend ourselves with honour? Did you not think more of us than you would have done, if we had remained inactive and submitted to your superior force without a struggle? During the Anglo-French naval negotiations which preceded the outbreak of hostilities in 1914, when our respective tasks and areas of responsibility were arranged, was it not these very traditions of our navy which inspired confidence? If you recall the glories of our Tourvilles and Suffren, do you not also remember Jean Bart, Duguay-Trouin and Surcouf of our more difficult times.

So, too, in the case of the German navy, imagination will for long be stirred by recollection of the exploits of the cruiser "Emden" and of the submarine campaign, however debatable the results may have been from the purely strategical point of view and from that of their effect on the final outcome of the War.

Such are the immense advantages of an active and aggressive defensive. In spite of defeats endured, and recognised as such by impartial history, the morale of the future is often inspired by the living memories of minor counter-offensives in the past. The submarine makes it more easy, now, to emulate those achievements. On these grounds and for all the reasons —material and moral—which I have enumerated, it is of special importance to weak navies, that is to say for those which cannot count upon that superiority or equality in surface craft only possible for a few great Powers.

The submarine will not secure victory for a weak Power, but it will enable that Power to demonstrate to the world, should the necessity arise, that it was deserving of and would have made a bid for victory if it had possessed the necessary resources.

# THE SUBMARINE AND INTERNATIONAL LAW

By Lieutenant G. B. H. Fawkes, R.N.

THE London Naval Treaty of 1930, Part IV, Article XXII, contains the statement that " the following are accepted as rules of international law :—

(1) In their action with regard to merchant ships, submarines must conform to the rules of international law to which surface vessels are subject.

(2) In particular, except in case of persistent refusal to stop on being duly summoned, or of active resistance to visit or search, a warship, whether surface vessel or submarine boat, may not sink or render incapable of navigation a merchant vessel without having first placed passengers, crew and ship's papers in a place of safety. For this purpose the ship's boats are not regarded as a place of safety unless the safety of the passengers and crew is assured, in the existing sea and weather conditions, by the proximity of land, or the presence of another vessel which is in a position to take them on board.

The high contracting Powers invite all other Powers to express their assent to the above rule."

An interesting article by Commander E. S. R. Brandt, U.S. Navy, entitled " Down went McGinty to the bottom of the Sea " appears in the *Journal of the U.S. Naval Institute Proceedings* for January, 1932. In this article Commander Brandt contends that Paragraph 2 of the above treaty introduces a new point of law, which is contrary to previous recognised laws, and that the submarine benefits thereby. The author goes so far as to say that " If Article XXII is the law, then law itself has been defeated," and that this must inspire further building of submarines. It may be of interest to examine some of Commander Brandt's arguments and reasonings in order to decide whether in the first place, " law itself has been defeated," and secondly, what benefits, if any, accrue to the submarine.

Commander Brandt rightly states that although the wording of paragraph 2 of Article XXII is in the negative, it carries by inference a positive meaning. Thus a merchant ship may be sunk without first providing for the safety of the passengers, crew, and ship's papers if she persists in refusing to stop on being duly summoned. He then claims that sinking, under these circumstances, is authorised in direct

violation of international law, to which paragraph 1 states submarines must conform. Commander Brandt also claims that since no criminality attaches to the commander of a ship that flees from an enemy, that ship should only expect to suffer from " forcible measures " necessary to bring her to, and should not run the risk of being summarily sunk.

As regards this claim, however, it should be noted that international law lays down the following principle: " A vessel is entitled to try to escape and is not liable to capture or condemnation for so doing, if she is ultimately overtaken. The cruiser, on the other hand, if her signals are ignored, should fire two rounds of blank; then, if necessary, a shot across the bow. If this has no effect, it will then be lawful to adopt any measures of force necessary to bring the merchant ship to reason." Thus a merchant ship in case of *persistent* refusal to stop on being duly summoned must take the consequences of any measures of force necessary to bring her to reason. If such measures have to be carried on for any length of time, they may well involve killing the passengers and crew and even sinking the ship. What difference is there between the risk of being summarily sunk and the risk incurred by forcible measures necessary to bring to a ship that *persistently* refuses to stop? If, however, Commander Brandt infers from Article XXII that a merchant ship which flees or resists may be sunk without first placing passengers and crew in a place of safety after she has been brought to (assuming that she has not been sunk in the process of so doing), this point requires further examination. It might appear that Article XXII does infer, though it does not intend, that a merchant ship may be ruthlessly sunk after she has been brought to. In this case, the legality of the inference drawn from paragraph 2 would seem to depend upon the word " persistent." Once a merchant ship has been brought to or made to cease fighting, she is no longer persistently refusing, and therefore cannot then be sunk without placing passengers and crew in safety. Thus it is contended that paragraph 2 of Article XXII does not introduce a new point of law.

Commander Brandt then points out that a submarine, unless specially designed for commerce destruction, can obtain no benefit from the visit and search of a merchant vessel. She is unable to sink the ship because she cannot provide either a prize crew or safety for passengers and crew. In most cases the only result will be an exchange of courtesies at the expense of giving away the submarine's position. In his opinion this justifies the merchant ship in assuming that any submarine sighted intends to break the law, in attempting flight and, if defensively armed, in using her guns to stand off the submarine by forcing it to submerge, thus decreasing its speed of pursuit. In so doing, the merchant ship

cannot be considered as acting other than in self-defence against a law-breaker. Why, therefore, does Article XXII here legalise the criminal and make criminal innocent flight? He admits that by Article XXII a surface warship is also entitled to sink summarily a merchant ship that flees, but avers that this is of no advantage to the former because a merchant ship has not the same incentive to flee, since she knows that the recognised procedure of visit and search can be effectively carried out.

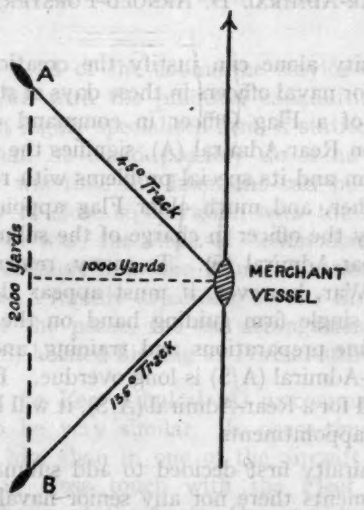
The reply to the above claims would appear to be that it is not always correct to assume that an enemy submarine intends to violate the law. It is agreed that open boats provide safety for passengers and crew, assuming that weather conditions are good and that land or another ship is near. British submarines operated in this manner in the Baltic during the late War. In 1914 three German submarines carried out legitimate cruiser warfare for a certain time. It is admitted that the amount of commerce destruction a submarine can legally achieve is small, and that these are rare cases, but still they occurred. It is, therefore, contended that the presence of a hostile submarine does not necessarily justify the assumption that it is about to act in an illegal manner.

As Commander Brandt says, "the really serious threat presented by the submarine lies in her torpedoes." Assuming, therefore, that she intends to use her torpedoes, a submarine before claiming the right to sink a merchant vessel must, under the wording of paragraph 2, prove "a persistent refusal to stop on being duly summoned," or "active resistance to visit and search." On account of her low speed, inferior gun armament and vulnerability, a submarine cannot approach on the surface a merchant vessel, especially if the latter is armed, without grave risk. If she does so, the merchant ship will fire at her or turn away from her before she gets within torpedo range. She must, therefore, approach unseen, submerged. To obtain a position for effective torpedo attack she must proceed to a position close to her objective's line of advance. She must then surface, make her summons to the merchant ship to heave to, and await persistent refusal to stop or offensive action on the part of the latter.

Now to ensure hitting with one torpedo a submarine should be within one thousand yards of her target's line of advance, and the track angle of the torpedo will be within the limits of 45 to 135 degrees. (See Fig.)

A submarine attacking a 10-knot ship surfaces in a position corresponding to A, makes her summons and in six minutes she will be in a position B relative to the merchant ship. During this time she has to prove persistent refusal to stop, and has also got to keep heading in

such a direction that the changing director angle will be on before firing. The actual time she will have available will, in practice, be considerably less; for, in the first place, by surfacing so near the bow of her target the submarine is placing herself in danger of being rammed, and in the second place, if a merchant vessel is going to "persistently refuse to stop," she is not going to maintain her course. The simple action of putting over the helm on receiving a summons, even if she has not done so earlier, will enable the merchant vessel to place herself stern on to the submarine, and therefore immune from torpedo attack; and such action cannot be defined as persistent refusal until the action is itself completed and safety assured.




Submarines operating in pairs might be able to achieve some result legally, but it is unlikely that any country will have sufficient submarines available to co-operate in this way.

It is contended that a submarine can derive no benefit from Article XXII for the use of her torpedo, and thus if she wishes to remain within the law, she will be forced to act as a surface ship by using her guns. In so doing she suffers, in comparison with a surface ship, from her inherent vulnerability and inferior gun armament. She has either to accept this risk or abandon the chase, neither of which alternatives can be said to inspire any motive for the further building of submarines to act as commerce destroyers within the law.

Despite the positive inference that can be drawn from paragraph 2 of Article XXII, its primary object—the illegalising of unrestricted submarine warfare—is, therefore, achieved.

# THE ORGANIZATION OF THE ANTI-SUBMARINE SERVICE

By Rear-Admiral D. Arnold-Forster, C.M.G.

SHEER necessity alone can justify the creation of new administrative posts for naval officers in these days of strict economy. The appointment of a Flag Officer in command of aircraft carriers, with the designation Rear-Admiral (A), signifies the growing importance of the Fleet Air Arm and its special problems with relation to the Navy as a whole. Another, and much older Flag appointment of a similar kind is that held by the officer in charge of the submarine service under the designation Rear-Admiral (S). To many, remembering the experiences of the late War, however, it must appear that there is equally strong need for a single firm guiding hand on the whole organization of our anti-submarine preparations and training, and that the creation of the post of Rear-Admiral (A/S) is long overdue. But, before considering further the need for a Rear-Admiral (A/S), it will be useful to examine the nature of such appointments.

When the Admiralty first decided to add submarines to the Navy, neither the departments there nor any senior naval officer afloat knew anything about them, and so special arrangements had to be made to administer the new service. An Inspecting Captain of Submarines was appointed in command of a gunboat which acted as sea-going parent ship for the first small boats. Though not an Admiralty official, he was provided with an office in the Admiralty building. By dividing his time between his sea command and Whitehall, where he had ready access to the Sea Lords, he was able to get the new service firmly on its legs more quickly than could have been done in any other way. As the service expanded, an old cruiser moored at Portsmouth took the place of the sea-going gunboat as parent ship, and eventually the present training centre and self-contained shore establishment in Haslar Creek came into being. Just before the War the appointment of "Inspecting Captain of Submarines" became a Commodore's, under the title Commodore (S), and it is now held by a Rear-Admiral.

The officer at the head of the submarine service could always go to sea when he wished in the attached sea-going tenders, or in the submarines themselves, yet his appointment was never an active sea-going command such as that of a senior officer in command of a fleet, squadron or flotilla. His administrative work in peace-time was carried out from the depot at Portsmouth. He made frequent visits to the Admiralty and elsewhere. Assisted by an expert staff, he initiated improvements in design, supervised new construction, and was represented at all trials and experiments connected with submarines, their equipment and weapons. He was also responsible to the Admiralty for the training of personnel, and controlled appointments of officers and drafting of ratings.

The responsible head of the submarine service can, in peace-time, keep far more *au fait* with the practical capabilities, limitations, and requirements of that highly specialized arm, if stationed at the principal submarine base, than he could possibly do if he sat in a room at Whitehall. But in war-time his functions can be better carried out from the Admiralty in close co-operation with the Naval Staff. Soon after the outbreak of war, the office of Commodore (S) with its staff was moved from Portsmouth to the Admiralty, and from there Commodore (S) controlled a rapidly expanding service throughout the period of hostilities. After the peace, the old arrangement was reverted to, and Rear-Admiral (S) hoisted his flag at Portsmouth in Haslar Creek.

The position of the Rear-Admiral (A) in command of the aircraft carriers, appears to be very similar. In peace-time there is probably no better place for him than in one of the aircraft carriers, where he and his staff are in close touch with the Fleet Air Arm and with senior sea-going officers of the fleet. One can imagine that should some small special operation by aircraft carriers be required, he might possibly take command of a detached squadron. But in the event of a general mobilization for war, it seems probable that, like Rear-Admiral (S), he would be required at the Admiralty, where he could assist the Naval Staff to cope with the many pressing questions that would crop up at once about aircraft, air personnel, and equipment.

Both submarines and the Fleet Air Arm are more or less self-contained services, with personnel and materiel of their own. In war-time all the units of both would be scattered over the face of the earth under the direct orders of various senior officers afloat. Yet, for the sake of efficiency, each of these services requires, in peace-time, a live and visible head of its own, in the shape of an officer of rank and experience commensurate with the importance of the branch he represents.

Although there are now officers specialised in general anti-submarine work, ratings qualified in the art of detecting submarines under water, and a small flotilla for training them attached to the anti-submarine school, it cannot be said that there is a self-contained anti-submarine service. And so, at first sight, it may not be so easy to see the need for a Rear-Admiral (A/S) as it is for a Rear-Admiral (S) or a Rear-Admiral (A). Everyone realises that anti-submarine work in its various forms can never be confined to any particular branch of the Navy. The brunt of the active offensive against enemy under-water craft will in fact fall upon destroyers, minelayers, aircraft, and our own submarines as part of their normal functions. Anti-submarine defences of harbours and anchorages, and other vitally important practical anti-submarine measures, will be undertaken by all manner of people. Hence the term "anti-submarine" denotes a special form of naval warfare, and not any particular branch of the Navy.

If precedent is wanted for the principle of delegating a flag officer, outside the Admiralty, to develop, organize and control an important part of the war training of the fleet not confined to one special branch, the appointment of an Inspector of Target Practice, held by a Rear-Admiral for a considerable period before the War, may be quoted. The Admiralty desired to introduce a new system of gunnery throughout the whole Navy, a change involving many new problems of fire-control, practical target work, recording methods, and about which everyone had his own ideas. The Inspector of Target Practice, or his representative, wherever possible attended all important firings. Without encroaching on the authority of anyone, he and his satellites were able to get things going and to initiate improvements. Whilst his office lasted, his influence was felt in fleets, squadrons and flotillas in the most distant corners of the world.

Practical work concerning preparations for anti-submarine warfare involves activities which normally come within the province of many Admiralty departments, shore establishments and commands afloat. Before the War there was no central authority either outside or inside the Admiralty to concentrate solely on these requirements. But, during the War, a strong emergency department called the Anti-Submarine Division had to be improvised to pull the various strings together and to seek for and make the best use of promising new ideas. Theoretically an operation and planning division of the Naval Staff in liaison with existing technical departments, by stress of circumstance it also became largely technical itself, with a special technical establishment and special schools of its own. On reduction to peace establishment, the Anti-Submarine Division disappeared, its numerous functions reverting to the

appropriate authorities. The only part of its activities to retain a separate existence was that relating to the underwater detection of submarines. The scientific development of this important branch of anti-submarine work, which before the War occupied an obscure niche in the torpedo schools, was turned over to the Anti-Submarine School at Portland, and placed under the direction of a Captain, known as Captain (A/S).

The offensive and defensive aspects of anti-submarine warfare are so closely connected that it would be a mistake to separate them in any scheme of centralised peace control. Thus, the protection of convoys, defensive in nature, may in itself provide excellent opportunities for attacking submarines. The same may be said of various measures associated with the passive defence of anchorages, such as the use of nets, controlled mines, local patrols, observation stations, etc. But, if a Rear-Admiral (A/S), with a suitable staff, were delegated by the Admiralty, it would provide a centralised authority to get into touch with all existing activities connected with anti-submarine warfare, to consult the responsible officers concerned about new ideas, and to make recommendations. Since the most highly specialized practical knowledge on the subject at present is concentrated at the anti-submarine establishment at Portland, presumably he would hoist his flag there, where he would be in close touch with the existing Captain (A/S). As an Inspecting Officer with Admiralty authority, he would as far as possible carry out his duties through personal visits by himself or one of his staff and thus avoid much unnecessary paper work. A few of the useful co-ordinating functions that suggest themselves for a Rear-Admiral (A/S) are as follows :—

(1) To attend anti-submarine practices carried out by seagoing fleets, squadrons, destroyer flotillas, aircraft, and submarines.

(2) To examine and see in operation technical appliances of all kinds intended for use against submarines, such as depth charges, mines, howitzers, guns, explosive sweeps, etc., whether service articles or in the experimental stage.

(3) To make a periodical inspection of existing arrangements for the protection of anchorages against submarines, and to examine all booms, net gear, mines and other contrivances intended or proposed for the same.

(4) To inspect all apparatus and stores intended for issue to merchant ships in war in connection with defence against submarines, and to ensure that it is efficient and up to date.

(5) To investigate all new and promising ideas suggested by officers of whatever rank, or by civilians, and to arrange for trials of inventions which appear to be of sufficient value.

On mobilization for war, Rear-Admiral (A/S) would strike his flag and go to the Admiralty with his staff and office records, where he would be an invaluable addition to the Naval Staff.

No doubt a great part of the functions suggested above are carried out to a greater or less extent by the Captain of the present anti-submarine establishment. But a Flag Officer with a roving commission would be in a very much stronger position to co-ordinate effort upon matters in which so many senior officers ashore and afloat are concerned. He would " carry heavier guns " at the Admiralty, and the mere existence of the office of Admiral (A/S) would focus attention on the many problems involved, and thus promote efficiency in this important part of naval warfare.

Last, but not least, is the question of moral effect. An Admiral's flag, with all it implies, carries a sense of trust and confidence peculiar to itself. Successive British Governments have expressed the wish to see submarines abolished by treaty; such a visible sign of our determination to frustrate their activities in war would help towards that end.

# THE DEVELOPMENT AND FUTURE OF THE FORTRESS

By MAJOR-GENERAL SIR H. F. THUILLIER, K.C.B., C.M.G.

On Wednesday, 12th October, 1932, at 3 p.m.

LIEUTENANT-GENERAL SIR J. R. E. CHARLES, K.C.B., C.M.G., D.S.O., in the Chair.

The CHAIRMAN introduced the Lecturer.

## LECTURE

THE answer made by the majority of soldiers to the question, "What part did fortresses play in the Great War?" would most probably be "Hardly any." If this be so in fact, it is imperative to inquire why their influence was so much less than in earlier wars; and are the conditions of modern warfare such as to render it unlikely that fortresses will ever again count for anything important in war?

Now it can be demonstrated that the influence of certain fortresses on the strategic development of the opening of the war on the Western Front was very great, but it will not be denied that many of the fortresses in the various theatres of war, on which millions of money had been spent, failed to fulfil the role expected of them. What are the causes of this state of affairs? What is the probability of fortresses playing a part in future wars?

### THE NATURE OF A FORTRESS

To answer these questions it is necessary to consider *what is a fortress* and what function is expected of it. A generally accepted attribute of a fortress—in fact in former times an invariable one—is that it is capable of all-round defence, thus making it unnecessary for the field armies to provide for its protection by their strategic dispositions. In fact this has hitherto been the prime purpose of fortresses—to set free the field armies for the offensive operations by which alone final victory can be attained. If a fortress cannot be defended without immobilizing a field army for its protection it cannot be said to fulfil its primary purpose. Whether under the conditions of the future this will be possible is one of the points to consider.

The term fortress also generally connotes a place defended by permanent works constructed in peace. Of course this is not an absolute condition, since it is possible for a place not provided with permanent works to perform all the functions of a fortress, i.e., to put up a defence as successful and as important strategically as any permanent fortress. Many such instances can be readily recalled:—in the American Civil War: Vicksburg, Atalanta, Petersburg; in the Russo-Turkish War: Plevna; in South Africa: Ladysmith, Kimberley, Mafeking; in Mesopotamia: Kut. We may also note that Verdun, because it was provided with permanent defences, which were practically abandoned, and although it was never surrounded, is called a fortress, while Ypres, which was successfully defended by field works only, is not. The question, however, implied in the title of this lecture is whether it is worth while to build or maintain permanent fortresses for future wars.

## FORTRESSES IN THE GREAT WAR

Let us see what the performances of the fortresses in the war of 1914-18 were.

*Franco-German frontier defences.*—The fortifications which had the greatest effect on the war were those which had been prepared on either side of the Franco-German frontier from Switzerland to Luxembourg. Behind this frontier line, which is 200 miles long, both nations had organized and constructed elaborate defensive systems. That of the French consisted of two "fortified regions," each being a group of fortresses, supplemented and supported by a number of smaller forts, in addition to field entrenchments and obstacles. The "fortified region of the Vosges" extended from Belfort to Epinal, and the "fortified region of the Meuse Heights" stretched from Toul to Verdun. Between these two fortified regions a gap had been left without defences, called the Trouée de Charmes; between the northern fortified region and the Belgian frontier to the north of it was a similar undefended gap called the Trouée de Stenay. The idea underlying them was that the fortified regions would cover the mobilization and assembly of the French armies and hold up the German advance on those areas, while if the German armies tried to invade by the undefended gaps they would expose their flanks to attack and would soon find themselves in a position very unfavourable to giving battle. It should be observed that these fortified regions presented a very different conception from that of the old-time single fortresses round towns, since they derived their strength from the grouping of the large fortresses with smaller works, into a connected and self-supporting system covering a great area. The Germans had constructed similar fortified regions, that of Alsace round Strasbourg, and that of the Moselle round Metz and Thionville.

Both nations had been at pains to keep the principal works up to date, but in many of the smaller works the improvements were already twenty years old and the concrete was not reinforced.

*Their strategic influence.*—As the works on this frontier were not attacked we cannot tell how they would have stood up to the fire of modern heavy howitzers of the type used by the Germans elsewhere.

The Germans elected to make their invasion of France through Belgium. They have made no secret of the fact that they were induced to take this momentous decision by the belief that the French fortifications would impose such delays and difficulties on their invading armies as to preclude the hope of obtaining a swift decision on French soil. Swift decision in the West was imperative to them on account of being engaged

with Russia in the East. The French claim that, since the German invasion of Belgium brought Great Britain into the war, and since this led, through the German adoption of unlimited submarine warfare, to the entry of the United States into the war, the fortifications did in fact have an immense influence on the war, and were well worth the large sums of money that had been expended on them.

Similar arguments apply to the fortifications on the German side of the frontier, for if they had not existed the German leaders would not have dared to concentrate for the advance through Belgium so great a proportion of their forces and to leave a comparatively weak force to operate on the southern portion of the frontier. These claims must, I think, be conceded.

*Cost of permanent fortifications.*—It is often stated in times of peace, when money for defensive purposes is grudged, that the expenditure of what are called huge sums on the provision of static defences is wasteful folly. It is interesting to see what these huge sums were. The total cost in the aggregate of the French defences of the Vosges and the Meuse Heights during the forty years preceding the war is stated by a French authority to have been approximately 400,000,000 francs, or £16,000,000 at the exchange of those days. That is an average of about £400,000 a year for forty years. The total is equivalent to the cost of only three or four days of the war itself. If we increase it by 75 per cent., to get a rough equivalent of the cost at present day prices it would be £28,000,000. A battleship costs from £7,000,000 to £8,000,000 to build and only lasts twelve to fifteen years when it becomes obsolete and has to be replaced. It is obvious that the cost of the defences is no more than it would cost to build and maintain one battleship over the same period, in fact less when the cost of its crew and maintenance are included.

*Psychological effect.*—At the same time it must not be forgotten that the strategic effect of these fortifications was brought about by psychological means only. Their existence produced in the minds of the German commanders a certain idea of their strength but no one can say whether that idea was true or false, as no one knows how these defences would have stood up to attack. The only portion of them subjected to serious attack was the Verdun salient in 1916, which will be referred to later. By this time the French authorities had entirely lost faith in the value of permanent works owing to the poor showing made by the Belgian fortresses in 1914. It would be interesting to know whether the views of the German commanders as to the strength of the French fortresses remained the same after the fall of Liége, Antwerp and Namur as it was at the period, many years earlier, when the Schlieffen plan was evolved and the 42 cm. howitzer had not been designed.

## BELGIAN AND FRENCH FORTRESSES IN 1914

Let us consider the performances of the other fortresses in the European theatre of war. The Belgian fortresses had been reconstructed at immense expense at the end of the XIXth and beginning of the XXth centuries. They consisted in each case of a girdle of detached forts, each containing a number of guns housed in steel cupolas, made to revolve or disappear by mechanical means and surrounded by a mass of concrete. Below were constructed concrete chambers providing acoommodation for the personnel and for the machinery required for hoisting ammunition, lighting and ventilation. The forts were also arranged for infantry defence and had infantry garrisons.

*Liége.*—Liége was surrounded by twelve such forts on a circuit of 30 miles. Nothing had been done to provide field defences or obstacles in the intervals between them. Liége was adjacent to the German frontier, and two days after the outbreak of hostilities a German infantry brigade succeeded in penetrating between two of the forts, to be followed next day by two others. These succeeded in occupying the city and the important bridge over the Meuse, although none of the forts had fallen. A mass of heavy artillery, including 21 cm., 28 cm. and a few 42 cm. howitzers were then brought to bear on the forts and proceeded to smash them to pieces in succession, reducing the steel cupolas and concrete chambers to shapeless ruins. Within eleven days from the first attack the whole of the forts had surrendered.

*Namur.*—Namur had nine forts on a perimeter of 25 miles. The Germans did not attack it till they had placed their heavy howitzers in position. In twenty-four hours five or six forts had fallen; in three days the German forces had entered the city; and on the fifth day the last of the forts had been destroyed.

*Antwerp.*—Antwerp, which by the ignorant multitude used to be called the strongest fortress in Europe, had a girdle of twenty-four forts with a number of infantry redoubts set between them, all on a circuit of about 60 miles. The forts, though of recent construction, were of obsolete design and weakly built. The guns were quite inadequate; they had no high explosive shell and not even smokeless powder. There were no means of observing fire and no telephonic communications. The Germans attacked the four forts in the south-eastern sector with 28 cm. and 42 cm. howitzers. In four days all the four forts had been destroyed or put out of action. The defenders, who had by then been reinforced by 8,000 men of the British Royal Naval Division, were holding a line of field entrenchments a couple of miles in rear of the line of forts, along the line of the rivers Nethe and Rupel. These resisted several attacks over a period of six days, after which the Belgian authorities

decided to evacuate the city rather than let their field army be invested in it. It may be noticed that the trench lines held out for six days while the costly steel and concrete forts only lasted four. I shall refer later to Antwerp in its strategic aspect.

*Maubeuge.*—Maubeuge was the only French fortress attacked in 1914. Its defences had not been remodelled like those on the eastern frontier and were completely out of date, with no hope of resisting XXth century artillery. The garrison was composed of second line troops, ill-trained for active operations. From the first day of mobilization the commander employed all his men in constructing a system of field defences and barbed wire, and in perfecting internal communications. The Germans brought up their heavy howitzers, including some 42 cm., and bombarded the town and defences which could not reply at all. Strong infantry attacks were then made ; but it was not till eleven days after the arrival of the howitzers that the place capitulated.

*Verdun.*—The case of Verdun in 1916 was fundamentally different from those of the other fortresses mentioned since it was never isolated or subjected to all-round investment. It was in fact a strong bastion in a long battle line. As such it maintained a most stubborn defence for four months against repeated attacks of the utmost violence and greatest strength. As has already been stated the French had abandoned the permanent forts and relied on field defences several miles in front of them, while the guns, instead of being in the very conspicuous forts, were in concealed positions in valleys and folds of the ground. But the trench lines had not been completed when the first shock of attack occurred. They served, however, to break the shock, though on the right bank of the Meuse the Germans, in the first four days, penetrated four miles and entrenched themselves close to the line of permanent works of Vaux and Douaumont. These were on ground giving command over all the interior of the position right up to the town of Verdun itself, and on the fifth day they made a desperate effort to establish themselves on it. This was unsuccessful, except that the fort of Douaumont itself was captured, though a counter-attack drove the assailants, all but a handful who clung to the ruins, out of it and to the edge of the plateau. On the left bank the German encroachment had been much smaller and the strong position on Mort Homme and Hill 304, defended only by trenches, continued to hold up the assailants. By now French reinforcements had begun to arrive and counter-attacks of fresh troops were organized. Bitter fighting, with enormous losses on both sides, continued till the opening of the Somme offensive drew off the German reserves, when all the efforts of the attack had failed to force the defenders to loose their grip and the city remained inviolate.

## FORTRESSES OF THE EASTERN FRONT

Of the fortresses of the Eastern Front only Przemysl, Neo-Georgievsk and Kovno sustained attacks of importance.

*Przemysl.*—Przemysl had a perimeter of 24 miles with nine main forts and intermediate smaller works. It had been remodelled and brought up to date by the Austrians in 1909. Its strategic importance was not vital, but its retention by the Austrians when their main armies fell back after the battle of Lemberg in September, 1914, certainly hampered the Russian advance. Having no heavy artillery with which to subdue the forts, the Russians contented themselves with investing the place. By some extraordinary incompetence the Austrians allowed four army corps—some 150,000 men, including a considerable number of cavalry—who had taken refuge in the fortress, after the defeat at Lemberg, to be shut up in it. The place was provisioned only for three months for its normal garrison. There was moreover a considerable civil population. In October an Austrian offensive relieved Przemysl and additional supplies were brought into it, but the Austrian advance was checked and in less than a month the Russians had re-invested the place. It sounds incredible but it is a fact that all the refugee troops, including the cavalry, were retained in the fortress for the second investment and no steps were taken during the period of relief to remove the civil population. One or two unsuccessful sorties were made and famine soon began to set in. On 22nd March, four months after the second investment, the place capitulated.

*Neo-Georgievsk.*—Neo-Georgievsk had really ceased to have any strategic significance when Warsaw was abandoned; but the Russians continued to hold it after the retirement of their armies from that place. Its defences were old, dating from 1891, but had been somewhat strengthened after the outbreak of war. The Germans brought up a siege train, including 28 cm. and 38 cm. howitzers, and invested the place. They then proceeded to demolish the forts in succession with the result that the place, with its garrison of 90,000 second line troops, surrendered after ten days of investment.

*Kovno.*—Kovno, though a small place, possessed great strategic importance in that it commanded the important road and rail crossings of the river Niemen, and so performed a necessary function in the defence of the right wing of the Russian front. It was defended by eighteen forts, dating also from the XIXth century. These stood out against the German heavy artillery for twelve days before the place surrendered. The Russian authorities were deeply disappointed with this result and tried the fortress commander by a court-martial, which sentenced him to fifteen years imprisonment for "insufficient measures of defence."

## SIEGES OF THE XVIIIth CENTURY

It cannot be denied that the results of the defences which have been described were disappointing in the extreme and that they compare unfavourably with the defences made in the sieges of the wars of the previous two centuries.

*Length of sieges.*—What may perhaps be called the golden age of fortress warfare was the period of the wars of the Spanish Succession, when the armies of Britain and her allies were commanded by Marlborough and Eugène. Of the numerous sieges which took place in that period there were only two cases in which the besiegers failed to gain possession of the place, namely, Turin, which was relieved after nineteen weeks of siege, and Toulon, where the attackers (by land and sea) raised the siege after nine weeks. In the remaining cases the places capitulated after sieges which varied from a maximum of twelve weeks to a minimum of two weeks. In one of the latter cases official criticism of the result was expressed by the drastic method of beheading the fortress commander by sentence of a council of war. The average length of the twenty-five principal sieges during the years 1702 to 1713 was thirty-four days.

*Capitulation before assault.*—A siege of this epoch would have been prolonged if it had been customary, as it is now, for defensive positions to be held to the last. But the actual practice of those times was that a fortress might honourably capitulate as soon as the besiegers' trench operations had reached a stage which showed that an assault was imminent and practicable. This custom, which is curious in our eyes, is intelligible when the conditions are borne in mind.

*Size of armies.*—It has to be remembered that in those days armies were small and composed entirely of professional soldiers, while the numbers available were governed mainly by the financial resources of the various states. The undeveloped state of communications also greatly restricted the mobility of armies, and in fact made the employment of large armies (such as we would call large to-day) quite impossible. With such small numbers at their disposal, and no hope of substantial reinforcements to replace losses, commanders had to be careful not to lose large numbers of their men. Thus it came about that the surrender of a fortress before assault, on the usual condition that the garrison was allowed to march out and rejoin their own forces, was generally less of a calamity than the total loss of the defenders would be, as must happen, if they held out until overcome by force. All that the defence of any fortress can do is to gain time. If by denying possession of the place to the enemy for a month or two it had seriously impeded him in the attainment of his strategic objectives it had done all that could be expected of it and had adequately achieved its purpose. The inculcation

of the idea that fortresses should be held to the last originated with Napoleon, who, having vast supplies of cannon-fodder recruited by compulsory service in his armies, felt no qualms about the loss of fortress garrisons.

*Causes affecting development of fortress warfare.*—Two causes have profoundly affected the development of fortress warfare. One is, of course, the gradual but enormous increase in the power of weapons of all kinds; the other has already been hinted at: it is the change from the era of small armies of professional soldiers manœuvring freely in a large theatre of war to the era of universal military service, which results eventually in armies of such enormous size that there is no room to manœuvre in a theatre of war such as that of western Europe. It is difficult to say which of these has affected the subject the more.

*Power of weapons in the time of Marlborough.*—In Marlborough's wars, siege and fortress artillery had a maximum effective range of about 600 yards and fired round shot only. The flint-lock muzzle-loading musket of that period had an effective range not exceeding 200 yards and was capable only of a very slow rate of fire owing to the time taken in re-loading. Thus it was that the depth of the zone in which attackers were seriously exposed to the defenders' fire was only about 200 yards. The complications of the defensive lines of those days—the bastions and ravelins and hornworks in front of the main line, and the retrenchments, cavaliers and keeps behind it—were all devised with a view to delaying the enemy as long as possible in this zone, and bringing a maximum volume of converging and flanking fire to bear on him while traversing it. In fact, these devices constituted what we now call organization of the defence in depth. It was most unfortunate that this sound principle was entirely forgotten by the designers of the fortresses of the second half of the XIXth century.

*Sieges in Napoleonic wars.*—The rest of the XVIIIth century and the first part of the XIXth century did not show any great advance in the power of weapons. The sieges of the Napoleonic wars, including those of the Peninsular War, did not differ much in form from the earlier ones, except that in some cases they were more stubborn and led to more loss of life. The reason for this has already been mentioned, namely the greater supplies of cannon-fodder (on the French side) leading to the loss of the garrison being held of less account than the loss of the place.

## SIEGES IN THE ERA OF MODERN WEAPONS

It was not until the middle of the XIXth century that breech-loading rifled small-arms even began to make their appearance. The second half of the century saw also the introduction of rifled breech-loading artillery,

of ever-increasing power and range, and, finally, at the latter end, of smokeless powder, of magazine rifles and of machine-guns. The effect of these developments was an enormous increase in the tactical strength of the defensive, with the result that simple field works came to have a strength greater than that possessed by the most elaborate fortifications in past times. The defences of fortified places became much longer in the XIXth century, and it is curious to note that they were also much longer than those of the wars of 1914-18.

*Sebastopol.*—The siege of Sebastopol in 1854 came at the very beginning of the above development; only a small proportion of the small-arms on both sides were rifled and the artillery was still of the smooth-bore order. It held out for over eleven months. But it was never isolated, so reinforcements and supplies could always reach it. The defences were almost entirely improvised field works thrown up after the siege began.

*American Civil War.*—In the civil war of 1861-4, a number of sieges took place, of which the most important were Vicksburg, which held out for seven months, Atalanta six weeks, and Petersburg nine and a half months; in all these cases the defences were simple earthworks, thrown up in immediate anticipation of attack, and added to during the operations themselves. At Petersburg in particular the defenders' and besiegers' works grew up till they covered an immense area; great activity in erecting earthworks was displayed on both sides.

*Franco-Prussian War.*—There were numerous sieges in the Franco-Prussian War of 1870-71. In the majority of cases the defences were the old XVIIth or XVIIIth century enceintes close round the towns and it is not surprising that they made a poor defence against the Prussian artillery. The only places which had, to some extent, been brought up to date by the addition of a girdle of detached forts outside, were Paris, Metz and Belfort, and even in these the works were thirty years old. Belfort, where some field redoubts also were constructed after the outbreak of war, made a valiant and successful defence till the armistice. At Metz Marshal Bazaine committed the terrible crime of allowing his field army of 150,000 men to be shut up in the fortress, the Prussians therefore had only to invest the place till it fell from shortage of food and munitions in a little over two months. Paris had a girdle of detached forts which had been built in 1840-44 and were not only quite obsolete but also originally of bad design. However, the Prussians only maintained a rigid blockade and a severe bombardment of the city till the sufferings of the populace forced the governor to capitulate after a siege of over four months.

*Plevna.*—Plevna in 1877 first demonstrated the great defensive power of the breech-loading rifle. The defences were simple earthworks of a

very crude type, which were thrown up by the Turks during the operations themselves, with no obstacles of any sort; yet they proved capable of stopping by frontal fire alone all attacks by infantry in the dense formations of those days. After several large scale assaults had been defeated with immense loss, the Russians settled down to a simple investment of the place, which succumbed to famine after five months of siege.

*South Africa.*—The lesson of Plevna was emphasized in the South African War of 1900-02, after the appearance of the magazine-loading rifle, mostly in the form of the experiences of the British when assaulting Boer field positions. Ladysmith, Kimberley and Mafeking, defended by trenches only, held out for several months, but the artillery of the attackers was in little strength, and no assaults of any considerable force were attempted.

*Port Arthur.*—Port Arthur in 1904 was defended partly by permanent forts which though new were of obsolete XIXth century design and partly by improvised earthworks. The Japanese first tried to rush some of the improvised works by infantry assault with inadequate artillery preparation, but suffered great losses. They then brought up a heavy siege train, including 28 c.m. howitzers—the first appearance of these weapons in war—and set about formal siege operations. The defences, both permanent forts and temporary works, resisted further assaults and did not fall till five months after the beginning of the operations, when the Japanese by the capture, after great losses, of one of the temporary works, were able to secure a point where they could establish observation over the dockyard and harbour containing the Russian fleet at anchor, which they proceeded to destroy.

## COMPARISON OF FIELD AND PERMANENT DEFENCES

A comparison of the achievements of fortress warfare in the XVIIIth and XIXth centuries with its achievements in the war of 1914-18 brings out certain points.

The first is that incomparably the most successful defences were those which took place during the second half of the XIXth century, and that the worst were those of the permanent fortresses in the Great War.

The second is that nearly all the successful defences of the second half of the XIXth century were composed of field works thrown up at the time and often in the presence of the enemy; and this phenomenon reasserts itself in the Great War. Although the heavy German howitzers caused the immediate collapse of the Belgian permanent forts, not all the masses of heavy artillery brought to bear afterwards on either side could effect a permanent breach in the trench lines. In fact, there is nothing that permanent defences have done during the era of modern

weapons that has not been done, and generally better done, by field defences.

## DEFECTS OF PRE-WAR FORTRESSES

Can any reason be assigned for this? It can. Field defences designed and constructed at the time they are required are naturally more in accordance with the tactical conditions of the time and place than permanent works constructed perhaps thirty years earlier.

*Tactical defects.*—A still more important reason is that the pre-war type of fortress embodied gross tactical defects. It apparently required the Great War to teach the designers of fortresses the elementary principle—well known to their forerunners of the XVIIIth century—that linear defence is radically unsound. The old fortresses, consisting of a single girdle of forts, were an aggravated example of linear defence. The forts were nearly always sited on commanding ground, the capture of any one of which would give the attackers observation and command over the interior. They were large and extremely conspicuous. They contained both infantry and artillery, the latter of all types, both heavy and light. They were thus entirely deprived of the essential advantage conferred by the organization of defence in depth; they gave to the attacker the great advantage of being able to concentrate from his dispersed artillery positions an overwhelming fire upon each fort in succession, finding therein a conspicuous and crowded target. In fact he could literally "kill two birds with one stone," i.e., he could kill the infantry when he was aiming at silencing the artillery, and also silence the artillery when he was aiming at keeping the infantry down. Finally, in selecting such front line positions for their heavy artillery the defence threw away all the advantage conferred by long range and by high angle fire, which permit of fire from concealed positions. In fact, nothing could be more contrary to the tactical requirements of the day than the defences of most of the pre-war fortresses. This alone would suffice to account for their failure; yet it was not all. They were also obsolete from the material point of view.

*Obsolescence of permanent defences.*—We have seen how the Belgian steel and concrete forts immediately collapsed under the fire of heavy German howitzers. The scientific and industrial conditions of to-day encourage very rapid progress in military invention with the result that permanent defences, once built, soon become obsolete. In fact, the actual construction of permanent defences has the effect of making a present of the initiative to the expected enemy, who, in the case of a first class military and industrial power, may be confidently expected to produce sooner or later a weapon capable of destroying the defences or making them useless. Armies and air forces can be equipped with modern

weapons far quicker than fortresses can be built to resist them. Moreover, it is possible to do this in complete secrecy and the first intimation may be the destruction of the works on which a false reliance has been placed; this happened in 1914 when the existence of the German 42 cm. howitzers was unknown till they demolished the Liége forts.

## FORTRESS WARFARE IN THE FUTURE

We can now, it is thought, arrive at an idea of the shape that fortress warfare is likely to take in the future. We see that the design of defensive systems must always conform to the tactical methods of the day, and that at the present time this condition dictates organization of the defences in depth on the lines laid down in our manuals for the conduct of defence in the field.

*Depth of positions.*—If the position is required to cover a point of strategic importance, such as a city, or an important railway junction, the defences must be so sited as to keep the enemy at such a distance from it that he is unable to destroy it with his long-range weapons. It is also necessary that the foremost infantry positions must be sufficiently far in advance of the localities required for artillery observation to ensure that these will not be captured, and the eyes of the defence blinded, by a minor attack by the enemy.

*All-round defence impracticable.*—These conditions dictate so great a depth that it becomes evident that all-round defence on the lines of the ring fortress of the past is no longer practicable. The area to be enclosed would be so vast that a whole army would be required to defend it. To allow so great a force to be invested and isolated and deprived of its mobility is not to be thought of. Besides, the consumption of ammunition in modern fighting, not to mention supplies and other stores, is so enormous that unless communications remain open the defence could not last long.[1] We see that in the War the successful defences, such as Verdun and Ypres, were of places forming pivots in the general line of the operations of the field armies, and that during the periods when operations were mobile, the high commanders on the British, French and German sides were very careful never to allow any portion of their field armies to be entangled and cut off in fortified places.

*Fortified regions.*—We may therefore expect that permanent defences in the future will take the form of large fortified regions, organized in depth on the lines of the defensive positions in the Great War. Reinforced concrete will no doubt be used to a considerable extent for many purposes,

[1] During the seven months of the defence of Verdun from February to September, 1916, a *daily* average of 100,000 shells of all calibres were fired by the French. The consumption on battle days was double.

for small posts for infantry and machine guns, for positions for artillery, and especially for underground cover for troops and for command posts, battle head-quarters, observation posts, etc. Such fortified regions may be devised with a view to one or other of the following functions :—

(i) As pivots on which the field armies can operate, as were Verdun, Ypres and several important points in the war ;

(ii) As a barrier, not necessarily continuous, along a line of frontier, similar to the fortified regions on the Franco-German frontier ;

(iii) To bar a line of advance which cannot be readily turned or passed by.

### FORTIFICATIONS AND FIELD ARMIES

These positions will definitely not be intended for all-round defence. Fortified regions of this nature cannot fulfil their function except in close connection with the operations of the field armies outside them. They will always have to be abandoned if the field armies outside cannot prevent the enemy from turning their flanks and surrounding them. Their defenders will be formations of the field army and not static garrison troops of lower physical category and inferior training, as were mistakenly considered good enough before the war.

It is the failure to realize the uselessness of fortified places apart from the field armies which they should support, and which must support them, that has in several cases led to millions being spent on fortresses, which, when war came, either made quite inadequate resistance or were abandoned as soon as the enemy approached them.

*Bucharest.*—Bucharest is an outstanding example. When the fortifications were designed in the 'nineties, the enemy in view was Russia. It is difficult to guess the strategic end which it was expected to gain by fortifying the capital of this little state. If there was reason to hope that during the time the enemy would be prevented from occupying it, some favourable change in the strategic situation would make itself felt, its fortification would be justifiable, but what change of that sort was in fact possible? If the Rumanian field armies could not make head against an invader in the open field before he reached the capital still less could they do so when 120,000 of them (that being the number required for its defence) had been shut up in the fortress. The abstraction of such a number, amounting to nearly a fourth of their total mobilized forces, would be a serious diminution of strength to the small Rumanian army. The abstraction of the rather larger number required of the Russian, or of the Austro-German forces as it turned out to be, that would be required to invest the place, would be only a slight diminution of the much greater strength of those nations. The Rumanian

Government, when the enemy approached Bucharest, wisely decided not to let so large a proportion of their remaining effective troops be shut up in it, and also probably doubting the capacity of the forts to stand up to the German howitzers, evacuated the city. The money, said to have been £5,000,000 sterling, spent on these fortifications, which were constructed in the 'nineties to the designs of the Belgian engineer, General Brialmont, the designer of the defences of Antwerp, Liége and Namur, was absolutely wasted.

*Liége.*—Liége on the other hand had real strategic importance. Belgium did not contemplate under any circumstances being at war with one of her powerful neighbours without having the other as an ally. If Liége, which covered the road and rail crossings of the Meuse, could have held up the German advance for any considerable period, the time gained would have permitted of French forces coming to the assistance of Belgium. It failed to do so because it was not understood that steel and concrete forts are not sufficient to check an attack, unless supplemented by works and obstacles in the intervals between them ; still more because it was not realized that a fortress cannot act alone without the co-operation of field armies outside it.

*Antwerp.*—The same reasoning does not apply to Antwerp which does not stand near the German frontier. The inner girdle of forts situated about three miles distant from the city were built between 1859 and 1870, and the outer girdle, from five to eleven miles out, were begun in 1906 and had only lately been completed when war broke out. It is difficult to visualize what strategic conception underlay the decision to make of Antwerp a fortified place. In a war against Holland it would certainly have been a powerful support to Belgian armies defending the frontier or invading Holland, but it is not likely that war with Holland was in mind. In a war against Germany or France it does not appear to fulfil any purpose at all commensurate either with its cost or with the sacrifice entailed in allowing the entire Belgian field army to be shut up in it.

If it had been possible to bring British or French troops to Antwerp by sea, the place would have had an immense importance and value, but as the Scheldt flows through Dutch territory for 50 miles it could not be used for the passage of troops or munitions without violation of Dutch neutrality. It has been claimed that a Belgian army in Antwerp constituted a serious threat to the flank of the German armies during their wheel into France. But such a threat can be countered by relegating a detachment to form a line of investment. In these days when the tactical power of the defensive is so great the strength of the investing detachment need not be much greater than that of the invested force.

Nothing is more difficult than a "break-out" from a besieged place. Of the numerous attempts at this operation during the last century or more *not one* has been successful. At Antwerp the garrison allotted to the defence of the forts consisted of 40,000 civil guards, with little military training, though it must have been obvious that such a force would not suffice to defend even the threatened portion only of the perimeter—some 30 miles. By the time the Germans appeared before the place the entire Belgian field army, consisting of six divisions and a cavalry division, had fallen back into its shelter. Of these one division and the cavalry division were posted to keep open the communications with Ghent, the remainder to defend the intervals between the forts on the southern and south-eastern sides. To oppose this force and prevent it from being a threat to the flank of their advance into France the Germans allotted two corps (four divisions)—positively less than the force they were observing. When the active siege began, the total of the German besieging force was increased. Its maximum strength was four divisions, of which one consisted of marines while two were landwehr, besides three additional landwehr brigades, heavy artillery and engineers. Even then the investing troops were not more numerous except with regard to artillery and engineers, than the defenders, who had been reinforced by 8,000 men of the British Royal Naval Division.

What then was the strategic object in fortifying Antwerp? To hold up a force of the enemy no greater than that of the field troops within cannot surely be considered worth the millions spent on the works and the energy diverted to the idea of static defence. For the purpose of the defence of the Belgian kingdom itself to shut up the whole field army (and no less would have effectively defended the place) in a fortress on the extreme northern edge could only result in leaving the entire country at the mercy of the invaders.

As a help to the Allied cause by forming a threat to the flank of a German advance into France, a purpose which in all probability was not in the minds of those responsible for the decision to fortify it, the position of Antwerp, pinned up against the Dutch frontier, reinforceable only with difficulty and easily cut off, could not have been worse. Almost any other position would have been better for a fortified place with this end in view. Ghent or Bruges, Thourout or Roulers, all easily accessible from the sea would have been much better placed, and if one of these had been fortified and if, in addition, Lille had been maintained by the French as a fortress, the northern flank would have been secured and no temptation for a German drive to the sea could have existed.

## STRATEGY AND FORTIFICATION

Antwerp is a striking exemplification of the fact that it is imperative when deciding on the construction in peace of a fortified position to have

a clear idea of the role it is intended to perform in war. This role must invariably form part of a definite scheme of national policy in which the proposed action of the field armies, and of possible allies, is clearly envisaged. Under modern conditions which, as already shown, preclude the idea of ring fortresses, it is evident that defensive positions cannot fulfil their functions except in close connection with the operations of the field armies outside them, and that they will have to be abandoned if the field armies cannot prevent the enemy from turning their flanks and cutting them off. The old idea of a fortress as a girdle of forts, self-contained, manned by garrison troops of inferior category to the field armies, and yet capable of sustaining an investment on all sides and a prolonged siege by modern artillery, is, it seems to me, entirely dead.

## EFFECT OF MECHANIZED FORCES ON FORTIFICATION

There is one development, which may affect the question of fortification, on which I have not touched. I have been speaking so far of positions fortified against armies organized and equipped on the model of those of the present day. I think we ought to consider whether any change in the development foreshadowed is likely to come about from the advent of mechanization on a large scale. It seems to me quite a possibility that another role for fortification, even for permanent fortification, may arise if the future witnesses the employment of entirely mechanized formations of considerable size, that is to say, formations of which all personnel and weapons are carried on mechanical vehicles, either armoured fighting vehicles or carriers. We know that a mechanized force of this nature is capable in a single day of striking a blow at a point 90 to 100 miles distant from the place where it has passed the previous night. It is evident that in a future war, particularly in its early stages, there will be great scope for organized raids by mechanical formations, aimed at lines of communication, important strategic points, headquarters of formations, etc. Places of this nature, though far behind the forward areas, will no longer be secure.

Before the late War the almost universal opinion of those in authority in the Army was that a modern war would be so short and so entirely a war of movement that there would not be time or occasion for creating works of defence. Imbued with this view the authorities then responsible for army policy gave little or no training to the infantry in defensive warfare, cut down drastically the training of engineer units in military mining and allied subjects, and refused absolutely to consider the necessity of providing the army with trench mortars and hand bombs.

No prophecy was ever so falsified by events. However, notwithstanding the experience of the War, similar views have since been put forward. Some years ago I heard a very high authority inform an

audience of officers that the development of mechanized forces would render defensive works unnecessary. With this view I venture to disagree strongly. It seems to me that the more mobile the enemy's forces are the more necessary it will be to defend important localities against them by defensive works. In continental countries where there is an enemy separated only by a land frontier, not completely barred either by natural obstacles or by defences, there must be many important points within 200 miles of the frontier which should be defended against raids by enemy mechanical forces by means of permanent works.

Such works would have to be of a special type, continuous round the place to be protected, and designed to present a material obstacle to tanks. They would be designed to resist the infantry and light guns which can be carried in mechanical vehicles but it would be useless to attempt to make them defensible against heavy artillery or against formal and lengthy siege. A study, not as far as I know yet attempted, of the best type of defence for this purpose seems very desirable. It may lead us back to a modified form of ring fortress, not Antwerps nor Bucharests, but small places defensible by a battalion or a brigade, not intended for prolonged resistance, but proof against a raiding force with armoured vehicles. This is a line of investigation that seems worth exploring.

## DISCUSSION

BRIGADIER-GENERAL H. DE T. PHILLIPS: Another example of permanent fortifications were those in Manchuria at the time of the Russo-Japanese War. They were in two forms. The first was found in the elaborate defences of Port Arthur, where the forts were very elaborate and very costly. They took a lot of breaching. Russian policy in those days was undoubtedly to build very extensively, whether it was fortifications or Government Buildings, and at enormous cost.

The second form of defences were not tested, I mean those constructed outside Mukden. Kuropatkin defended most heavily the approaches to the South and South-East of Mukden. The Japanese, apparently, did not touch the defences, but took Mukden by outflanking it to the West and coming in on the North. I saw these defences to the South and South-East of Mukden. They were earthworks of an elaborate nature; and consisted of redoubts with two or three caponieres capable of mounting either guns or machine guns, generally constructed at two levels, of which the lower level would afford the relief garrison some cover, and with shallow ditches which could, I presume, be filled with obstacles. These were from four to six hundred yards apart. The Russians had not dug trenches between them but had filled the intervals with every known form of old fashioned military obstacle. I imagine this is the type that is envisaged for fortifications of the *point d'appui* type—small redou ts with obstacles or a trench line in between. At any rate, that was the idea which the Russians had at that time for hastily constructed defences.

COLONEL B. T. WILSON, R.E. : Clemenceau's last book contains a very interesting chapter on the work the French were then contemplating in fortifying the present frontiers of France. I wonder if the Lecturer has any idea of the form those works are taking and how much money has been spent on them during the last two or three years, and how far they have been completed. It would also be interesting to know whether some of the countries, like Poland or Italy, which have exposed frontiers or coasts, have spent money on field fortifications or field fortification strengthened with small permanent works in the manner the Lecturer has suggested.

COLONEL P. J. MACKESY, D.S.O., M.C. : I feel that in this country we are apt to live on catchwords ; people write books and label them " Permanent Fortifications," and the average man imagines this to be some extraordinary abstruse subject, whereas permanent fortifications and fortresses are merely the servant of strategy and tactics ; they must be regarded as such.

The Lecturer referred to the pre-war fortifications on both sides of the Franco-German frontier. Looking at the German side, and thinking of their great fortified areas around Metz and Strasburg, and of the strategic basis of their plan of war, we realise that time was the essence of the whole conception since the German plan depended on putting every available man on their right for the great wheel through Belgium. In order to do that, they had to gain time on their left ; they must stop the French breaking through ; consequently they built the great fortified lines from Metz to the South which did gain them the time to develop their right wing. But in the end their plan failed because a few years before the war they lost faith in their defences, and, instead of making their right wing as strong as it might have been, they kept large forces too long in the South. I suggest that the conception of those fortified areas of Metz and Strasburg was absolutely right, but that the Germans failed because they lost faith in them.

The Lecturer referred to the failure of the Belgian defences. I suggest the Belgian defences failed because they were not ready for war. They stood virtually on the frontier ; so it was certain they would be attacked at the very outset. True, there existed plans for building trenches and putting up fortifications in the intervals ; but these were on paper—and they remained on paper.

When war came, the fortresses were attacked and there was never time to put paper plans into practice. I suggest the lesson is that the state of preparation of any fortification, whether on a land frontier or on a sea frontier, must depend entirely on the time which it can be reasonably be hoped may elapse before the attack comes.

COLONEL VAN STRAUBENZEE : Does the Lecturer think the term " fortress " should be struck out of our textbooks ? For instance, places such as Portsmouth and Plymouth used to be regarded as fortresses. Are they no longer to be considered in any sense fortresses ?

THE LECTURER :

With regard to the Russian defences at Mukden, I am not acquainted with the nature of the design of these defences. Neither would time permit of my describing in any detail the nature of the defences which would form the fortified regions to which I referred. Very possibly they would be of much the same type as were erected at Mukden. I am inclined to think—but in this matter I am not sure I am right as regards the French—that redoubts as such, i.e., what we thought of as a redoubt before the war, a small, more or less closed, work held by a definite garrison of infantry and capable of defence front and rear—are unlikely to form

part of the defences of the immediate future as far as one can see, but I do not know. I know nothing about the nature of the French fortifications but I suspect they are more likely to be small ferro-concrete works, something in the nature of pillboxes; at all events structures of this type would play a considerable part in the infantry defence.

With regard to the defences of Port Arthur; perhaps I omitted to say that these elaborate and permanent works erected by the Russians did certainly make very good defences indeed. I do not wish to disparage the achievements of works of that kind, except to say that ordinary field defences made at the time would have done every bit as well, without necessitating the spending of so much money in time of peace, while they would have been better adapted to the tactical conditions of the ground.

I agree entirely with what Colonel Mackesy said about catchwords. In a sense it is rather a pity to lose old terms, particularly in the art of fortification. Things that have had a definite military meaning for two or three hundred years are now apt, as he says, to be treated by officers of other branches of the Army as something so highly technical that they cannot be expected to pay attention to it. That is definitely a pity.

He also mentioned the German plan of attack, and said he considered the conception was right and the execution wrong. I think all the accounts and all the opinions made public since the war lead to exactly the same conclusion.

In dealing with the failure of the Belgian defences, perhaps I put too much emphasis on the heavy German artillery. But I intended to say that, with regard to Liége at all events, the failure was mainly due to the entire want of preparation, to the idea that a single row of forts, with nothing whatever in between, could be expected to offer a proper defence. As Colonel Mackesy says, that is obviously quite impossible. The case of Maubeuge illustrates that fact. Those defences were far more out of date than those of Liége, and yet made a very much better defence, because from the first day of mobilization the commander made preparations, and in those few days was able so to organise things as to put the Germans to considerable loss before taking the place.

Colonel van Straubenzee asked whether the term "fortress" should continue to remain in use. When I was at the War Office there was considerable argument as to whether the manuals should continue to use the word "fortress" in regard to coast defences like Portsmouth and Plymouth, and as far as I remember it was decided that the term should be retained.

THE CHAIRMAN:

First of all, the Lecturer stated that permanent fortifications cost a great deal of money. In my limited experience at the War Office I have found that money is generally the governing factor. There are many places in the British Empire where money has been sunk and has to be sunk for improving the defences, and the question which always arises is, if such a sum of money, which in these days runs into millions, is going to be spent, how long will it remain of value to the nation? That is a very difficult question to answer, more especially in these days, when one invention treads on the heels of another. Thus, for instance, there has been a perpetual fight going on in the Navy, ever since the days of the ironclad, between gun and armour. This is reproduced in very similar form in land warfare as well.

The next question upon which I wish to touch is whether the use of the expression "fortress" is still continued. Without reference to books I think I may

say we habitually use this expression when referring to coastal fortresses such as Gibraltar, Malta and Singapore. In the manuals which deal with that aspect of warfare reference is made to the appointment of an officer called Fortress Commander. I think it may be said, therefore, that that expression has not yet been modified.

Colonel Wilson alluded to the permanent defences which the French are in the course of erecting. They have quite recently spent no less than £33,000,000—in, I think, three years—in fortifying the southern portion of their astern frontier. This work—so I understand—is being carried out definitely on the lines which have been described by the Lecturer: that is to say, the defence of an area, avoiding anything in the nature of the all-round defence of small tactical localities, anything in the shape of a fort. A great deal of work has been done, however, in providing ferro-concrete shelters in important places where machine-gun detachments and the reserves of the field army, who may be occupying an area, can remain under cover during artillery bombardments. They have also made, and I believe stocked, a large number of field magazines, down to the extent of earmarking the mechanical transport which is to move the wire, the digging tools and a variety of other engineers' stores required to place the whole area in a state of defence. The preparations include even the mining of road junctions and bridges, so that all that remains to be done is to place the explosive charge and to blow up a crater or blow down a bridge, as the case may be, the high explosives for that purpose having been already stocked in these magazines. This is essentially a case of the preparation of an area for fortification, as opposed to those rings of isolated forts, with great gaps between them, which was the procedure in vogue until the end of the last century.

I should like very much to endorse what both the Lecturer and Colonel Mackesy have said, that the subject is by no means a purely engineer question. It is very largely the basis on which our tactics of attack and defence are developed, and it is obviously the duty of all branches to study these matters. The Lecturer is entirely consistent in avoiding the use of technical phraseology which tends to make the Army think this art is peculiar to the Royal Engineers. It is nothing of the sort; throughout my service as an Engineer officer I have tried to induce brother officers of other branches to learn what they can about it, and to persuade them to use the tools for digging field entrenchments which are destined to protect their own bodies, not mine! Indeed it is a matter of strategy and tactics about which every soldier ought to know a considerable amount.

The customary votes of thanks to the Lecturer and to the Chairman were carried by acclamation

# THE STRATEGIC PROBLEMS OF IRAQ [1]

By Colonel R. H. Beadon, C.B.E., *p.s.c.*

THE entry of Iraq into the League of Nations and the abandonment of the British mandate terminates British responsibilities for the defence of that country. Nevertheless much of our interest in Iraq still remains; indeed this is recognized by the Treaty, which accords a special position to our representative in Baghdad and also provides for the location of certain bases for the Royal Air Force. But the outstanding fact is that, in so far as her external affairs are concerned, the new Arab state has control of her own destinies. Still without undue self-complacency it may be claimed that Iraq was fortunate to be under the tutelage of a Great Power during the early stages of her existence—quite apart from the fact that she owes to that Power her delivery from the Turk—since her geographical position and her general circumstances are not such as tend to an unbroken tranquillity within and without her borders. Of those conditions Great Britain has had ample experience during the last fifteen years.

There is no need to labour the strategic importance of Iraq. It may however be recalled that there lie concealed behind the once familiar phrase, *Drang nach Osten*, and the consequent Baghdad railway project, such problems as arise out of the control of the head of the Persian Gulf, the focus of the air routes of the Middle East and the first line of defence of the British Indian Empire. Moreover peace and stability in Mesopotamia must to some extent influence the promising experiment in Palestine. It is on account of all these factors that her strategical situation furnishes questions the solution of which is no straightforward matter.

First and foremost comes the position of Iraq in regard to Turkey. Up to the time of the agreement reached in 1926 the future of the Mosul vilayet had been responsible for a long period of friction, while frontier incidents were of such common occurrence that war seemed almost certain. With the demarcation of the "Brussels line" following the award of the League of Nations the threat happily passed away although, as compared with the provisional boundary claimed, that award deprived Iraq of some fourteen hundred square miles of territory and of a line from

[1] See Map facing p. 806.

the military point of view more favourable to defence. Nevertheless the decision was welcome because at the period of the most acute tension we could only have disposed of some 15,000 miscellaneous troops—British, Indian, Assyrian Levies and Arab; and although these would have been supported by a powerful air arm, they were woefully deficient in artillery and aids to mobility. Whether such a force could have checked a sudden Turkish irruption until reinforcements should arrive from India seemed at least doubtful to those who were responsible for the study of the problem on the spot, because at that period Turkish morale was high and there was a considerable Turkish army in hand near the frontier.

But if crises pass, topographical features remain constant or at any rate comparatively so, despite the steady conquest of the forces of nature by man. It is not therefore without profit to glance at the problem confronting Iraq in the event of any embroilment with her northern, and incidentally martial, neighbour. The boundary line is some 180 miles long. To the West lies the French mandated territory of Syria, and to the East Persia. The whole of this frontier lies within a *massif* of mountainous country passable at but few points and therefore apparently easy to defend, provided a mobile striking force with good lateral communications is held in hand in some suitable area North of Mosul ready to deal with the enemy as he debouches from the mountains on to the plain.

For convenience in considering possible avenues of hostile advance the frontier may be divided into two sectors—the western being taken as up to and including Amadia, and the eastern the remainder as up to the Persian boundary.

Into the western sector there are three practicable entrances. By far the most important is that formed by the gap made by the River Tigris at Feish Khabur through which an advance could be made by both right and left banks. Such a movement would bring the attacking forces almost immediately clear of all difficult country on to the plains, while an incursion from this direction would also turn the whole line of the northern frontier. In so far as the Turks are concerned this line of action would harmonize with their normal troop dispositions, suitable advanced bases and means of supply; it would thus be the easiest to execute. In short it seems the natural and obvious entrance to the Mesopotamian plain. Against these considerations may be set the fact that once having emerged on to the plains there would be some 90 miles to cover before the tempting objective of Mosul was reached, and since the country is wholly open a strong opposing air arm would be afforded enormous scope. The left flank of such a force would also be susceptible

to attack from troops assembled under cover of the high ground to the East of the line of advance.

Some 20 miles East of Feish Khabur is the Zakho pass over which goes a road suitable for wheeled traffic. Its entrance would be difficult to force in face of opposition, and since it could be turned by Feish Khabur there would seem little object in attempting to force it, although the avenue which it provides would be useful for a flanking column to an advance via the latter place and the river Tigris, and would enable troops to be carried to within some 50 miles of Mosul without being definitely cut off from the hills. It is perhaps for this reason that much attention has always been focussed on this particular locality in considering various schemes of defence.

About 20 miles East of Zakho a track running *via* Baroshki and Babek is passable for pack transport only, and nothing further need be mentioned in this sector except the very indifferent second class road by Amadia and Aradina—a very unpromising avenue by which to attempt a passage, even if unopposed. In any case it is hardly practicable, if at all, between December and March. In fact the only road *via* Feish Khabur, in the absence of heavy rains, could be utilised during those months. In the western sector of this front one further consideration must be taken into account and that is the possible violation of Syrian territory by an advance direct from Nisibin and following the route which was projected for the Nisibin-Mosul section of the Baghdad railway. This line would enable difficult terrain to be avoided, but lack of water presents objections, as do also vulnerability to interference from the air and the risk of interference on the right flank by hostile Arab tribes specially unfriendly to the Turks. Again complications with France might ensue, although the infringement would only involve a small desert corner of her mandated territory.

The eastern sector of the northern frontier presents obstacles far more serious than those in the western, in that thoroughfares practical to wheeled traffic are to all intents and purposes non-existent. A number of tracks now utilized for pack transport might however be improved, but a good deal of work would be required to render them passable to light vehicles and field artillery. There exists also some possibility of a movement *via* Urmia in the direction of Rowanduz, which latter is a place of considerable strategic importance since it forms the bottleneck through which roads from Turkey and Persia pass to Iraq–Kurdistan. Any move from the Urmia direction would suffice to turn the whole northern line of defence, but it would involve going through Persian territory. But, political reasons apart, the nature of the ground militates against the employment of anything much more than comparatively weak detachments.

On the whole, therefore, the northern frontier of Iraq can be adjudged as reasonably favourable for defence. It is however a long line to watch with a number of entrances through which the enemy might push small bodies with a view to gathering to themselves any disloyal or lawless elements. The key position is undoubtedly Feish Khabur and an advance from there astride the Tigris would probably be the most difficult threat to counter. The situation was met by Sir John Salmond in 1923 on the principle of a " forward " defence, and it seems unquestionable to those acquainted with the factors involved that this policy was the soundest, even in the event of a superior air force being unavailable to co-operate with the defending troops. But with the co-operation of such force the advantages of his plan were overwhelming, since the enemy would be compelled to contend with the air arm under conditions most unfavourable to his " ground troops." For the defending army the provision of pontoon bridges for the easy passage of the Tigris between Mosul and Feish Khabur would be essential, and provided other means of mobility were assured, it might be feasible to deal with the attacking forces in detail. A central main force located in the neighbourhood of Dohuk with a strong mobile detachment on the right bank of the Tigris with its communications eastward across the river assured, would seem indicated as the initial concentration, since it would cover Mosul and the air base presumably located there, while it would, at the same time, be in a position to operate against the enemy either East or West of the river according to which side he was weakest. If he marched by one bank he would risk having his communications cut.

A further important aspect lies in the probability that in the initial stages of the campaign, before he could organize his communications, the enemy would be unlikely to utilize a force of more than 20,000 combatants owing to maintenance difficulties. But the advantages conferred by numerical superiority are all too obviously on his side provided he is given time to develop them. A purely defensive, even a lively defensive policy, on the part of Iraq is in fact to be deprecated most emphatically. The essence of the problem *vis à vis* Turkey is then to provide sufficient force to enable a general watch to be kept over the frontier, and to keep in hand a main body capable of movement at short notice and able to make head against an enemy some 20,000 strong and probably well equipped with artillery. Such provision is not outside the resources and present organization of the Iraqi state. The situation is interesting from a military standpoint as it shows the triple obstacles of mountain ranges—a great river—and a desert, which in each instance may be deemed to operate favourably for the strategic defence.

Opinions vary as to the likelihood of Iraq being at serious issue with the Government of Riza Khan. The Persians have interests in Mesopotamia in that the great shrines of Kerbela and Najef, which form a powerful attraction in the eyes of all Shiah Moslems, attract large numbers of pilgrims annually, and it may be that the lordship of these holy places may sooner or later be coveted by the chief Shiah state. Both towns have long been the centres of seditious propaganda aimed at the existing régime in King Feisal's realms, and it was not until comparatively recently that Teheran deigned to recognize the latter officially. However during the last few years relations have improved, so that it may be expected that with the progress which is now taking place in Persia, religious fanaticism is likely to wane. On the other hand, the Persians have a strong sense of nationality, and with the re-organization which is now taking place under the present Shah, this may perhaps show itself in increased national aspirations. For this reason it would be unwise to leave Persia wholly out of count.

It is worth while noting certain railway projects which may influence the situation in this direction. The Iraq railway system has its railhead on the eastern frontier at Khaniquin which harmonizes with the former German scheme which contemplated a line into Persia *via* Kermanshah and Hamadan from which a branch would go North East to Teheran, while the main artery ran by Koum and Isfahan to Douzbab where it would link up with the great Indian system.

The French, on the other hand, have always contended—chiefly for technical reasons—that the railway should be taken into Persia *via* Rowanduz, and now that France has control of that portion of the Baghdad railway which passes through Syrian territory, the technical reasons are reinforced by those of a weightier order since it follows that she would desire to join up the trans-Persian line with the Syrian system. Persia, however, is in no hurry to embark on railway projects, and perhaps she has been wise to concentrate on improving her roads instead. At any rate up to the present she has confined herself to the construction of two short stretches of railway between Bander Shapur on the Caspian to Aliabad, and from Bundershah on the Persian Gulf to Dizpil, and even the latter of these has no bearing on the question of Iraq defence.

As regards the frontier North of Baghdad, the valley of the Greater Zab river could be blocked at Rowanduz where it might be wise to maintain something in the nature of a permanent garrison supported, though indeed at a distance of over 100 miles, by the troops permanently stationed at Mosul, which latter place serves as a pivot for the northern and north eastern fronts. Outposts at Kifri and Khaniquin, being within easy reach by rail of the forces normally located at Baghdad

should suffice to cover a concentration to meet an advance *via* Kermanshah. For the purpose of serious operations involving the employment of a numerically strong invading army this ancient route is the only practicable one for an irruption on to the Mesopotamian plain from the East and its defence presents certain difficulties. The existing railway from Baghdad to Kirkuk which is projected to continue *via* the latter town to Mosul, forms the main artery of communication North and South. At Qaraghan junction with its important bridge over the Diala river this railway passes within some twenty-five miles of the Persian frontier in the *trouée* North of Khaniquin. There is therefore little elbow room if, as is desirable, a general action were contemplated East of the railway, although the ground astride the enemy line of advance lends itself conveniently to defence. Two parallel features, the Jebel Darwishkah and the Jebel Qizil Robat, five miles apart, form strong natural positions difficult to turn not so much on account of their extent but because of the lack of communications by which they might be turned. Their retention would go far to block the avenue to the South West although to fight on the Qizil Robat would be in unpleasant proximity to Qaraghan junction. Should this latter be taken the next defensive line indicated is that of the Jebel Hamrin the last mountain barrier covering lower Mesopotamia. It is behind this range that concentration would probably have to be effected in the first instance.

The remainder of the Persian frontier need not be seriously considered since communications are practically negligible, and even if this were not so, no suitable objective offers itself to compensate for the immense difficulties involved.

The western frontier offers no distinctive features being merely a line drawn in the desert. From Feish Khabur South West to Abu Kemal on the Euphrates it borders on the French mandated territory of Syria, thence southwards adjoins the British mandated Transjordania and finally to the South West reaches the country under the sway of the Wahabi monarch, Ibn Saud.

It is unnecessary to consider the Syrian-Iraq boundary beyond remarking that the only feasible approach is by the line of the river Euphrates. But the situation in relation to Ibn Saud is very different. From the winter of 1927-28 until 1930, and even spasmodically since then, trouble with raiding tribes from the southern desert has been constant; early in 1928 it threatened to develop into official hostilities. But a desert with the only available water at wells few and far between is no suitable theatre in which to stage a war on the ground and, owing to the enormous distances to be covered, war was no facile operation for

the Royal Air Force. The latter was, however, enabled to act so far as to inflict punishment on some of the more important bands of raiders who, owing partly to this and partly to British diplomatic pressure, were ultimately disowned and outlawed by Ibn Saud. The Wahabi Government however still maintained their opposition to the construction of Iraqi military and police posts in the desert South of the Euphrates, and it needed a personal meeting, which took place on a British warship in the Persian Gulf some two years ago, between the two kings concerned before a *modus vivendi* was reached.

Before touching on the armed forces which are at the disposition of the Iraqi state mention may be made of the serious minority problem with which she has, practically ever since her emergence, been faced in Southern Kurdistan, because the inhabitants of that region have not taken kindly to Arab rule. Consequently the Iraq Army has in conjunction with the Air Force and Assyrian Levies been more or less continually engaged in the mountainous north eastern regions of the country abutting on the Turkish and Persian frontiers. In the course of these operations valuable experience of a nature novel to the Arab of the plains has been gained—indeed Southern Kurdistan has been to the Iraq troops what the North West Frontier has long been to those of the Indian Army, namely their training ground.

Apart from the Kurds the Iraq government has at all times to consider possibilities of trouble with certain of its own more warlike tribes, especially those located on the Euphrates whose power for mischief we had good occasion to realize from our experiences in 1920. In fact the " baptism of fire " of the Iraq Army was against a recalcitrant Sheikh at Anah some ten years ago. Since that time however there has been a marked advance in law and order throughout the country.

Such briefly are the military considerations which confront the young Iraq nation and they are indeed comprehensive enough to occupy a General Staff far more experienced than that which is at her disposal. The army has during the last few years undergone a thorough process of re-organization and, despite certain weaknesses among the officer personnel and an absence of reserves, is probably more efficient than anything that could be placed against it. Recruited at present on the voluntary system it now numbers some 11,000 men obtained mainly from the hardy desert tribes inured to privations and able to march and fight without demanding much in the way of material comforts. There were until recently three regiments of cavalry, but one was disbanded to make way for a motor machine gun company; there are five batteries of artillery, one of which is armed with the modern 3.7-in. pack howitzer, eleven battalions of infantry, together with some

engineers, signals, mechanical transport and the necessary services. The equipment and armament is thoroughly up to date and, although in so far as the air is concerned, reliance is placed chiefly on the Royal Air Force, the nucleus of an air arm has been formed.

It may be claimed that the strides which have been made in efficiency are due to the hard work of the British military mission, which at its maximum numbered some forty officers including an Inspector-General. Under the new régime, however, the strength of the British personnel is to be reduced to fourteen, including three officers of the Royal Air Force. These measures of economy, for such are the official reasons given, are certainly to the detriment of the army but at the same time its foundations have been well and truly laid, while special efforts have been made to endow it with mobility.

In point of numbers it is not a formidable force, but in the event of war it could expect to receive assistance from the fighting tribes which form a considerable proportion of the population of the country. There are, also, 8,000 police trained to the use of the rifle, constituting a well organized and disciplined body of men. The great increase in the general use of motor vehicles should also ensure an adequate reserve of transport being available on mobilization.

A condition which is inseparable from the security of the country in the future lies in the need of a larger population. In the days of ancient Babylon and Nineveh, Mesopotamia is alleged to have supported some 40,000,000 people. To-day the estimated census is in the neighbourhood of 3,000,000 only. Improved sanitary conditions are rapidly lessening infantile mortality, and the opening and development of the country which has been steadily proceeding will be an even larger factor towards an increase of the inhabitants. Turkey has a population of about 12,000,000; and Persia of about 9,000,000.

But since the issues of war cannot be foreshadowed by a mere counting of heads, it has been a wise policy that has laid in Iraq the foundations of a military system responding to her present capacity and future prospects. In so far as that policy is pursued the risk of disturbance becomes less and less in the Middle East. It can be claimed that a sound military doctrine has been inculcated embodying clear and central ideas around which the life of the Army depends and must be developed.

# THE COUNTY REGIMENT AND THE DEPOT

By Lieutenant O. L. Jones, the Cheshire Regiment.

THE pressing need for economy in our military institutions could not fail in certain quarters to evoke a cry for the abolition of the infantry depot. That demand has naturally aroused a determined protest from all who are interested in maintaining the present order of things. So far does this diversity of opinion lead us that the real issue of the argument tends to be obscured. Thus the *raison d'être* of many of our institutions loses its proper perspective, and the suggestions and counter-suggestions become merely crippling, since they are no longer constructive. Accordingly let us take the home battalion and the regimental depot as two integral parts of the home infantry organisation, thereby grouping certain of their functions together, see whether these duties are allotted to each in the most economical way possible or whether there is room for rationalisation. Now these two units exist chiefly to maintain the personnel of the infantry overseas, to provide the nucleus units of the expeditionary force and to keep in touch with the County both as a recruiting area and as the locus of the Territorial Army battalions.

Seen in this light, it is clear, firstly, that there is an unnecessary sub-division in the training of the young regular soldier now that the Militia infantry no longer exists; secondly, that while the depot absorbs a relatively lavish establishment, the training of the regimental leaders of the expeditionary force is stultified by a chronic shortage of men in the home battalion, since leadership is above all a practical art.

Circumstances have changed considerably since the regimental depot system was established sixty years ago. Consequently it seems unreasonable to keep up the form when some of its main purposes have been profoundly modified. Nevertheless, it will generally be agreed that some sort of depot is still desirable for the following purposes:—

(*a*) To act as the headquarters of the Regiment.

(*b*) To raise in some measure the regular recruits.

(*c*) To be the mobilisation centre for regular reservists.

(*d*) To perform the final discharge of time expired soldiers from overseas.

These duties could be carried out by a small Regular staff, but when the duties of the depot include the training of Regular recruits only, a wasteful duplication of administrative personnel already existing in the home battalion necessarily occurs. In Mr. Cardwell's time and up to 1914, the depot gave an identical training to both Regular and Militia recruits, being the headquarters of the Militia infantry of the county and also responsible for the annual training of reservists; so, then, the administrative overhead expenditure was spread over a larger output and could be justified economically. Now to maintain an annual output of about 250 Regular recruits an establishment some 80 strong is needed, and of these less than 25 are directly or essentially concerned in the training of the men. Surely this is out of all proportion.

On the other hand, as has been said above, owing to shortage of men, the home battalion works under conditions gravely detrimental to the efficiency of the expeditionary force. For at present infantry commanders, from lance-corporal to lieutenant-colonel, but rarely have any opportunity to handle other than skeleton units. This arises from the fact that the peace establishment, roughly 750, is a maximum fixed by the Army Annual Act, and can only be reached at the opening of the trooping season; even then it includes all the recruits under instruction at the depot. Thus the maximum strength of the battalion after its foreign drafts, averaging 150 annually, have been dispatched can never, even in theory, be much above 450, that is presuming recruiting has maintained establishments. Within this total, band, drums and employments account for about 200, a constant figure whatever the total strength may be. Thus for many months of the year not more than 250 men are available for distribution between the signals and four companies: allowing about 100 for N.C.O's.; this means 30 private soldiers a company. The resultant unsatisfactory conditions for individual training are relatively unimportant compared to the disastrous effects this shortage has upon platoon and company training. Even in the final stages of collective training, it is only too common to see platoons a bare dozen strong.

Surely the remedy for this state of affairs lies in the reform of the regimental depot. Such a reform to be acceptable must not only effect economies but maintain the present establishment of officers which is required for mobilisation, and above all keep intact the County link, for to quote the words of a distinguished officer:—

> "The benefits accruing to Regiments during the Great War from their identification with territorial areas were very generous, very real and very precious . . . Before and since the War the local pride in the old Regimental colours, the support given to

> Regimental Associations, the welcome always forthcoming to parades of old soldiers, the respect and care shown to Regimental memorials, the real desire to find employment for the time-expired County soldier, all tell the same tale . . . The link . . . has been greatly strengthened by the splendid services of the Territorial battalions during the Great War. Regarded with real pride by all ranks of the Territorials, that tie has become a real spiritual force. But the continuance of that spiritual force for both Regulars and Territorials depends on the maintenance of the localisation of Regiments."[1]

These conditions can be satisfied by transferring the duty of training recruits to the home battalions of Line Regiments and turning the depot into a complete regimental centre.

Accordingly, the home battalion should be reorganized on the following lines:—

| | |
|---|---|
| H.Q. Wing and M.G. Company .. | No change |
| 2 Rifle Companies .. .. .. | "Service" companies. |
| 1 Rifle Company .. .. .. | "Training Cadre" |
| Recruit Company | |

As the object of this reorganization is to raise the strength of the home battalion so as to create live commands, the time spent in the recruit company should be reduced to about twelve weeks, the pre-1914 period. This could be made possible by giving only the most elementary weapon training in the rifle and bayonet in the recruit company, and by deferring educational training until the recruits join their service companies. The final week of recruit training would be done with the training cadre company and correspond to the present depot cadre period, and the full number of physical training parades could be completed after joining the rifle companies. Recruit squads could usually be posted to their rifle company as complete platoons; a scheme which has much to commend it.

It is calculated approximately that this measure, combined with the absorption of surplus personnel from the new depot, would immediately raise the strength of the duty men in the home battalion by at least 100. When and only when Nos. 1 and 2 (service) rifle companies reached a strength of 100 each, would No. 3 (cadre) rifle company be expanded for the collective training season only, being reduced to cadre again when individual training commenced. The objection may be raised that most barracks have no gymnasium for recruits. These, however,

[1] "The Cardwell System," by Lieut.-General Sir E. A. Altham, K.C.B. —See R.U.S.I. JOURNAL for February, 1928; p. 106. It may be noted that in many cases this Territorial connection goes back at least to 1751.

do exist in many brigade lines, and in any case there are few days when physical training, including apparatus work, is not better performed in the open air.

A more serious objection will be that recruits will be relatively raw on joining their rifle company. The remedy for this lies in the hands of the various commanders, who really will have some men to train. This apparent weakness will be more than offset by the gain to the commanders, both as leaders and instructors and by the increased amount the men will absorb by having their initial training spread over a longer period. A further objection will be to the reduction of one rifle company to cadre, because on mobilization its personnel will be strangers to one another. This of course would equally be the case in a battalion as it now stands, after the influx of 60% of reservists.

The permanent establishment of this cadre rifle company would consist of the present numbers of officers and N.C.Os. with a few men for company employment, so that it might form in skeleton the third rifle company for battalion and higher training. Moreover, besides dealing with the recruits' final week, this company would be the battalion training school for educational training, preliminary instruction of officers and N.C.Os. for certain courses and for prospective N.C.Os., whose centralised training has from experience been proved to be invaluable. It will in fact be an expansion of the present battalion cadre. A further minor economy would be to make the sergeant-instructor in musketry a platoon sergeant of this company, for he would always be available for battalion training. For special battalion or higher formation exercises this cadre company could also draw on suitable recruits of two months' service. Leavened by the trained cadre these recruits would give the commanders something to command, and the recruits might even learn something themselves. After all, there must have been many recruits in the ranks of the Royal Naval Division that went to Antwerp in October, 1914.

The case for training recruits in the home battalion is strengthened by the fact that the C.O. of this battalion is now to some extent held responsible for their training. The transfer of recruit training to the home battalion in peace will not make the infantry training centre scheme for war unduly difficult to arrange. To meet the requirements of battalions on a "short tour" of foreign service a "Mediterranean Depot" could be permanently established, where the recruit companies would be stationed during the tour.

It remains to consider in detail the functions of the reformed regimental depot, and reference should now be made to the Appendix, which deals with the disposal of the present depot establishment.

(1) *Recruiting.*—It is possible that there may be a temporary check to recruiting with the removal of the local "nursery," but on the other hand the firm establishment of the "zone" recruiting system has already discounted the importance of this factor. It must be remembered that the mainstay of the old County recruiting system was the steady flow of Militiamen into the Regular Army. This loss of local atmosphere for the recruits can be largely offset by comfortable depot reception arrangements, particularly as regards messing. In fact, the depot in its present form is not an essential magnet to recruits, as the man who wishes to join his own County regiment will do so in any case, or as soon as the regiment is "open" for recruiting. On the other hand, many men join the Army in order to get away from their relations.

Assisted by the depot quartermaster the regimental adjutant would be responsible for all Regular recruiting duties in the County, thus dispensing with the services of some retired recruiting officers. Recruits would be dispatched to the home battalion by standard squads, and whilst these were forming the men would be usefully employed on various depot fatigues. Recruits enlisted outside the County area would be sent either to the depot or direct to the home battalion, if the latter were stationed nearer to the place of enlistment; for example, a recruit attested at Whitehall for a Highland regiment, stationed at Aldershot, would not be sent at State expense to Scotland in order that he might proceed thence to Aldershot.

(2) *Mobilization and Discharge.*—A centre in the County forms the most convenient "place of joining" for reservists. In fact, the original Localisation Act was largely designed to facilitate rapid mobilization, and was inspired by the example of the German mobilizations of 1866 and 1870. Mobilization stores and the necessary "Q" staff are already in existence. For the majority of time-expired men from abroad the depot would be the most convenient discharge centre, whilst it is doubtful if accommodation would be available in the home battalion. If the depot retained accommodation for 100 men this would normally suffice for both them and the unsquaded recruits, and if occasionally foreign drafts exceeded 70 men the recruits could be sent to the home battalion without waiting for a standard squad to be completed.

(3) *Depot Barracks.*—Into the barracks thus vacated should be moved, wherever they were conveniently placed for the purpose, the offices of the Territorial Army County Association, the headquarters of Territorial Army divisions and areas and of Territorial Army infantry brigades; and what is far more important they should become the headquarters of the Territorial battalion based on the County town. This would produce an important capital saving by the sale of offices and drill halls

and an annual saving on their maintenance. The messes and institutes of the depot, while remaining fundamentally regimental property for the use of Regular and Territorial alike, would be inherited by this Territorial battalion and could probably be run by the N.A.A.F.I. Together with the sports grounds these would make of that battalion a club which would attract a good type of recruit. These facilities could be shared, to as great an extent as possible, with any other Territorial battalions of the Regiment.

On the training side the barracks would be invaluable to the Territorials, not only on account of their general superiority over actual drill halls, but also because of the existence of accommodation for 70 men normally available. Thus sub-units or individuals of any branch of the T.A. could be concentrated for week-end or other training with no worries as to feeding arrangements. . A suitable proportion of sleeping accommodation would also be retained for officers and sergeants. Such an environment, with its traditions, the presence in many cases of regimental museums or memorials and the trophies and silver of the messes, would be of inestimable value in strengthening the ties of sentiment and tradition between the Regular and Territorial battalions.

(4) *Regimental Centre.*—Apart from this added unity with the Territorials, the regimental depot in its new form would remain the focus of all the common interests of the Regiment and retain all the advantages of localisation. This object can be achieved by various measures, including :—

(1) The appointment of a field officer as regimental adjutant for recruiting duties and to command the regular side of the depot, working as at present under area headquarters. To bring this officer into intimate touch with the Territorial Army he would also be a staff officer of the County Territorial Army infantry brigade. In a County finding a one-unit brigade he would be brigade major, e.g., 127th (Manchester) Infantry Brigade ; in others, e.g. 166th (South Lancashire and Cheshire) Infantry Brigade, the second regimental adjutant would be staff captain. The withdrawal of brigade-majors was a serious loss to the Territorial infantry and could now be made good, especially would the restoration of a Regular staff help Territorial brigade commanders. It is true that there are brigades which do not lend themselves to this simple distribution, but a glance at the Army List shows that it would be possible to come to an arrangement, on a divisional basis, which would be fair to all regiments, whereby no brigade would have more than two staff officers.

It may be noted that the absence of Territorial infantry in Northern Ireland calls for special treatment in the case of Irish Regiments.

(2) The colonel of the Regiment should be given an official house at the depot town. If he were a serving officer he should be permitted to nominate a retired senior officer, preferably one who had commanded a battalion, as his deputy. Thus he and the regimental adjutant would manage or supervise such matters as the Old Comrades' Association, magazine, museum, chapel, mess property, etc.

(3) The colonel or his deputy should be a member of the Territorial Army Association.

(4) The depot would continue as the centre for all regimental reunions of Old Comrades, etc.

(5) The present official visits of the C.O. of the home battalion to the depot should be continued, but the principal object would now be liaison with the Territorial Army battalions, for the finding of whose permanent staff he is responsible.

(6) The continuation of the practice of stationing the home battalion at intervals of time reasonably near its County.

(7) The practice of sending at least a small party of Regulars to Territorial camps should be looked upon as a first call upon the Regular battalion at such times.

(8) The official encouragement by the War Office of annual "regimental weeks," when sports fixtures would take place at the depot town between the home battalion, the Territorial battalions and prominent civilian organizations. Here again comes in the accommodation retained at the depots. Probably if such events were made attractive to the public a good "gate" would be obtained, which might balance expenses.

At a time when the Territorial Army is being deprived of the vital attraction of its camps, any scheme such as this, which is characterised by the unusual combination of a reduction of expenditure and an all-round increase of efficiency, may perhaps have some claim to favourable consideration.

## APPENDIX.

### Disposal of Depot Personnel.

| *Present Appointment or Duty* | *Suggested Duty* |
|---|---|
| Depot Commander .. .. .. | Regimental Adjutant. |
| Adjutant .. .. .. .. | Asst. Adjt., Home Bn. |
| Quartermaster.. .. .. .. | Q.M. (depot and recruiting). |
| Remainder of officers.. .. .. | Recruit Coy., Home Bn. |
| R.S.M. .. .. .. .. .. | Post to T.A. vice A./R.S.M. to solve seniority problems in Home Bn. Allow this Bn. a Drill Sgt. (W.O. Cl. 2). Junior A./R.S.M. of T.A. Bns. joins Home Bn. as W.O. Cl. 2. |
| R.Q.M.S. .. .. .. .. | For mobilization and recruit reception duty. |
| C.S.M., C.Q.M.S.<br>Instr. A.P.T.S.,<br>15 N.C.Os., Trng. Coy. } .. .. | Recruit Coy., Home Bn. |
| Instr., A.E.C. .. .. .. .. | Cadre Coy., Home Bn. |
| 1 Sergt. (also pay duties) .. .. | Recruit reception duty. |
| 2 Lance-Sergts. .. .. | Conducting duty. |
| 2 Privates (Orderlies) or Pensioners (under 50 years old) | Re-employed. |
| 2 Civilian Store men .. .. .. | Mob. and Miscellaneous. |
| 1 Civilian O.R. Clerk .. .. .. | Clerk to Regt. Adjt. |
| Remainder (approx. 45 O.R.s.) .. | Absorbed into "paper" establishment of Home Bn. (in case of N.C.Os. of whole Regt.). This increases real strength but diminishes paper establishment of the Army. Call it a further measure of "Disarmament." |

*Notes.*

1. Reduction of training to 12 weeks in recruit company means that N.C.Os. for 4 squads would suffice. A further reduction of 3 N.C.Os. is thus possible. In emergencies additional N.C.Os. could be found from cadre company.

2. Considerable travelling expenses will be saved by no constant turnover of depot personnel. Foreign Bn. to cease to supply officers and N.C.Os. for recruits.

3. Messing at depot becomes a N.A.A.F.I. contract. Rations drawn for Regulars through Q.M. Present civilians in messes become N.A.A.F.I. employees.

# INFANTRY REORGANIZATION

By an Ex-Regimental Officer.

THE reorganization of troops—their division and sub-division, their assignment to this and to that formation, the arrangement of their training periods, their classification in categories—all these mental gymnastics will always exercise a peculiar fascination. But it more often turns into a siren call leading him who hears and follows into the depths. Major Ashworth seems to have heard and followed—to the dismay of "A Regimental Officer," who pursues him with anathemas, interspersed with faint blessings, until, pausing momentarily, he himself hears the charmer's call and, turning aside, takes the seaward path. It is true, however, that his more cautious nature restrains him from more than partial immersion where Major Ashworth has plunged bodily in.

Briefly, the main considerations which emerge from the two articles are the questions of regimental sentiment and the efficacy of the Cardwell system. As regards the first, regimental sentiment, few will disagree in the main with what " A Regimental Officer " says. But one of his statements needs some comment. No line officer, he says (in effect) is proud of being an infantryman as such. This statement really represents a half-truth. It is quite true that the line officer's first pride is in his regiment, but it is also true that this same pride is based on the achievements of his regiment as an *infantry* regiment. He knows, moreover, though he does not boast about it, that the keystone of an army in all wars has been the Lieutenant of Infantry. The Infantry of the *Line*—a proud title ! The prestige of the infantry was high in the old German Army, and it was probably their best arm. The true infantry officer will experience, at the sight of a well-drilled body of men moving in quick-time, with bayonets fixed may be, and colours flying, a thrill which not even the magnificent spectacles of fast-moving horsed guns or galloping cavaliers can fully reproduce for him. What emotions are, or may in future be, aroused by the sight of a lorry full of foot-soldiers, a gun drawn by a tractor, or an armoured car manned by spurless cavalrymen, the writer does not pretend to know or attempt to guess. But doubtless these things will acquire by association a sentiment of their own.

"A Regimental Officer" properly attaches value to such emblems as facings. These, however, are rarely displayed now that full-dress is almost abolished. The colours of the old facings could, however, be perpetuated by some such method as a device of narrow braid or piping on the lower part of the sleeves of the walking-out tunic, and, in addition or alternatively, a strip of similar material round the edges of the shoulder-straps. There is no novelty in these details of uniform, the expense would not be great, and they would provide a little relief to the sombre aspect of the soldier's walking-out dress, in regard to which the Army is now at so great a disadvantage *vis à vis* the Navy and the Air Force.

As touching titles, the matter is complicated. Some regiments have pride in more than one designation. The writer can think of at least one regiment which has pride, firstly, in the territorial element in its title, which it would not willingly relinquish; secondly, it takes pride in the descriptive element, more especially so as the regiment in question is one of the three existing regiments which, having borne the particular description since it was first introduced into the Army, continue to bear it; and, thirdly, it takes pride in its old number, which, though not fully indicative of the antiquity of the corps, is one under which it has distinguished itself in bygone wars, and which it holds in affection. In such cases and there must be many similar in some degree, to touch must be to wound, and perhaps to wound mortally.

"A Regimental Officer" tabulates the defects of the Cardwell system. As regards the first of these, its inelasticity, this must be granted, but provided that a dislocation is only of a temporary nature, means of meeting it can always be improvised—e.g., the formation of temporary reserve or depot companies, quartered in the vacated barracks. The second of the defects mentioned is the failure of the system to provide a striking force at home without recourse to "the cumbrous machinery of mobilization." "Striking Force"—what memories mixed and distant that phrase awakens! Striking Force—Brodrick cap—the Aldershot Army Corps—which came first? But is a fixed establishment striking force really desirable? Twenty battalions at Aldershot, hints "A Regimental Officer" (the Aldershot Army Corps again!). Twenty battalions, however, may just as likely be too many as too few for a particular emergency. Again, it may be more convenient, in the particular circumstances of some emergency, to form a part or the whole of the striking force required out of battalions already overseas—with or without replacement by mobilized battalions from home; and, in any case, is the machinery of mobilization really "cumbrous"? At the mobilization of August 1914, the writer found himself in the position of acting-quartermaster of a depot—the quartermaster himself being in hospital. He had

no previous experience of quartermaster's work to speak of. He remembers five strenuous days—culminating in the mobilization of the special reserve battalion, the incorporation in its ranks of the surplus regular reservists, and its departure to its war station. He remembers much pencilling in a note-book—there were so many things to be thought of; he remembers that there were little emergencies to be met, sudden demands for instructions on some minor point suddenly arisen—demands sometimes referred to the always calm adjutant, sometimes satisfied on his own initiative (in order to spare the adjutant) in a way he would never have dreamed of doing a week earlier. He remembers the excellent quartermaster-sergeant, the model mobilization store-keeper, the harassed but always efficient master-cook; but of anything meriting the expression "cumbrous" he remembers nothing. All was well-prepared; the organization was simple (a crowning virtue); all went like clockwork.

Thirdly, says "A Regimental Officer," there is the defect of the Cardwell system that a large proportion of the reservists are "soft" in condition, and not up to date in training. But this is not a defect in the Cardwell system as such. It is present in some degree in every army, the peace establishment of which is notably lower than its war establishment (in nearly all armies, therefore). The defect is particularly manifest in the British Army owing to the fact that the reservists do little or no training during their time in the reserve. But that, again, is not a fault inherent in the Cardwell system. The writer once put a party of reservists through a musketry course (the only form of training they underwent whilst in the reserve). The course took only an hour or two to complete, and the men were expected to be home the same evening; some had come a considerable distance. He noticed that a certain number of the men were quite unfamiliar with the short Lee-Enfield rifle. They did not know how to adjust the sights and they did not understand the charger method of loading. He took upon himself to give these men a little instruction in the weapon. They stayed gladly for the extra twenty minutes or so which was all the time available, and they expressed gratitude for what had been shown them. Weapons and methods probably change more quickly now-a-days; perhaps Major Ashworth and "A Regimental Officer" may feel disposed to bring their talents to bear on the problem of adequate "refresher" training of reservists? They will, of course, find the question of expense a strong current to contend with.

Finally, the inequalities of promotion. This is a very old question. Short of a general list, there seems to be only one way of dealing with it, and it need not be confined to infantry officers. These inequalities are chiefly felt—financial considerations apart—in garrison and mixed

detachment duties. It is always bound to be rather trying, though it is usually cheerfully enough tolerated, when a senior captain, for example, finds himself acting under a major of another corps who is considerably junior to himself in point of length of service. But let there be set a fixed period of service as qualifying for promotion to higher rank, professional efficiency being, of course, satisfactory. Let it be, say, an average period—taking the Army as a whole. When the period is served, the officer concerned is promoted to the higher rank in the *Army* (if he has not already attained the rank regimentally), but without its pay and allowances, this being a sop to the Financial Department of the War Office, unless he is employed—exceptionally—on *Army* duties in the higher rank. He would continue to perform the *regimental* duties of his regimental rank.[1]

Such a method, though it would not entirely eliminate these inequalities would do much to reduce them, and would in fact eliminate their more glaring manifestations. An extension of the system, and a rationalization of it, would be to delay the promotion of officers who, not having served the qualifying period, came up for *regimental* promotion, until such time as they had served the period, but giving them the pay and allowances of the higher rank whilst performing, as they would normally be doing, its duties regimentally. But this might well be unpopular in quick-promotion regiments and corps. It would also raise administrative complications—too many probably.

And now the writer hears the call. Tables, tabulations, and titles appear enticingly before his eyes. But he turns his head resolutely away. Major Ashworth is totally submerged, but "A Regimental Officer" still has his head and shoulders above water, and yet more thunderous anathemas may reach the pleasant shore where ex-regimental officers repose and toy with the bows and arrows of their younger days.

[1] In the writer's time at his Depot, Captains were on the orderly officer roster. The *Gazette* notices would be simple: "The XY Regiment: Lieutenant Z to be Captain in the Army;" and, later: "The XY Regiment: Lieutenant (Captain in the Army) Z to be Captain."

# SELF TRAINING

## AN ADMIRAL'S LETTER TO HIS SON

MY DEAR ———,

My object in this letter is to put before you some concrete ideas as to the necessity and reasons for self training and to indicate the best way to set about the task. I hope that the results of my experience may thus be of use to you in deciding how best to shape your course for yourself. I have nothing very original to say, but I believe that one benefits by occasionally mustering one's ideas and focussing thought on things that may otherwise escape attention until too late, merely because they are more or less obvious.

To begin with, it is necessary to be quite clear as to the aim which you should keep in view in your Service career. Your daily work must obviously have the first call on your time and energies but, unless you look beyond the immediate present, you may arrive at high rank without having prepared yourself for its responsibilities. Your ultimate aim must therefore be to fit yourself for command.

The means available for self training are :—

(*a*) The activities of ordinary daily life ; and

(*b*) Private study.

I have already touched on (*a*) and it is, of course, apparent, that the intelligent and thorough performance of one's day to day humdrum job is essential to achieve experience, knowledge, character, self control, resolution, initiative, powers of leadership and the other attributes of a good officer. Under the heading of daily life are included all Service matters as well as such subjects as games and taking one's proper share in the social and sporting life of the ship and mess.

These activities do not, however, absorb the whole of your time but leave a small margin available for private study ; for example, after dinner on at least some days of the week. What should you aim to achieve as a result of your private studies ?

Some of the characteristics necessary for an officer have already been recalled ; but beyond these essentials the outstanding requirement for command is ability to weigh up a situation and choose the right course of action in the circumstances. For this purpose you need to acquire both knowledge and experience and to train your mind to

make use of them. You will in this way become accustomed to discern quickly the various factors involved in any situation and be able to balance the pros and cons and choose a reasoned course of action with promptitude.

The training of the mind is achieved gradually by adding to your active daily life a modicum of reading and thinking. It is far better to read thoroughly and think carefully about the more important subjects included in your studies than to read a larger quantity rather sketchily. Nevertheless, in order to make sound deductions, your experience must be drawn from the widest possible field, and you should therefore aim at extending the scope of your studies bit by bit. This is one very good reason for starting a course of reading at a comparatively early stage in your career and for keeping it up steadily. There will be little difficulty in doing this once the habit is formed, and the interest will grow as you proceed. As an illustration of the necessity for studying widely I would quote Foch. Remarkable man as he was, he nevertheless knew little of the decisive part played by economic forces or the value of the British Navy. This was due to his reading having been too narrow in scope, and he therefore drew his conclusions from a too limited field.

Your reading has three main purposes to fulfill :—

(1) To keep you well informed about current events and thereby to enable you to achieve a wide general knowledge.

(2) To enable you to extract from the experience of others, as recorded in history, the lessons which are useful and applicable to present day affairs.

(3) To supplement practical experience by helping you to gain as much knowledge as possible of present day weapons, their capabilities and limitations, and their methods of use both strategical and tactical.

Firstly, as to general reading. There is no better method of acquiring a good general knowledge than by reading the *Times* every day. There are also magazines and reviews, such as the " JOURNAL of the R.U.S.I.," " The Round Table," " The Nineteenth Century," " The Quarterly Review," etc., all of which contain some useful articles.

Then as to historical reading—the first thing is to know how to read. Some useful advice is given in the May, 1932, number of the " JOURNAL of the R.U.S.I.," and I need add little here; but it is a good thing to have a rough notebook and pencil, and make notes as to any points or reasons for courses of action that appear obscure so that you can come back later and clear up these issues.

You should frequently stop and think. Do not be satisfied with anything, but criticise freely. This is the only chance you will get of saying just what you think about the actions of Senior Officers, and so you may as well take it, especially as it is first class exercise for the brains. Try to realize what information was available at the time when the episode you are studying was in the making; visualize the situation thoroughly, and consider especially what you think the object should have been and how you would have set about achieving it. Then see what was done and why, and the reasons for failure or success. In particular, examine the actions of the great leaders of the past to discover the reasons which led them to pursue certain courses of action. This really amounts to a sort of " appreciation " and it is not necessary to write it out in great detail, but the methods employed in an appreciation form an excellent basis for your consideration and analysis of events in history.

In reading history you should try to extract the underlying principles. These are the only parts which are sure to be applicable to a future war whatever changes or limitations in weapons may have supervened. The value of such fundamental considerations is well illustrated by Lord Haldane, to whom the chief credit is due for having our Expeditionary Force well organized and equipped by 1914 in spite of much opposition. He was a great expert at rooting out principles, and it was this quality which helped him in a task for which he had no other special qualifications. Napoleon, too, studied all the great commanders from Alexander onwards, not as regards the details of their campaigns but to find out the principles which guided them.

To come to practical recommendations, I strongly advise you to read the lives of great leaders. Naval leaders must naturally come first, but military and civil biographies should also be included so as to broaden the view and guard against that most distressing complaint, a narrow outlook. Not only do you get information from a biography but you draw unbounded inspiration from the study of the life of a great man, and your admiration for the man and his character helps to keep up your enthusiasm. A " Life " can be kept going at the same time as another more prosaic work.

I referred just now to " principles " and before you begin your reading it is as well to be clear what these principles are. Of course, there is nothing abstruse about them, as they are merely common sense; but it is necessary and useful to examine these things and consider them, tabulate them, talk them over and keep them constantly to the fore. You will find the " Principles of War," as they are rather grandiloquently termed, set out in an O.U. publication in the ship's library. They are

also well explained in Field Service Regulations, Vol. II which you can buy or borrow. They are very well discussed and explained by General Sir F. Maurice in "British Strategy"—a most valuable and interesting book which I recommend you to get and keep, and study thoroughly at the beginning of your reading.

Having done this, the late war should, for obvious reasons, claim your first attention. But before starting detailed studies of naval operations you ought first of all to provide yourself with a general picture or frame into which to fit your subsequent reading. I recommend, therefore, that your next book should be Professor A. F. Pollard's "History of the Great War," though any short history would do if you cannot get Pollard's. There is no need to study details of individual operations at this stage. Make notes of the salient features in each year, the operations carried out, the reasons for undertaking them and their repercussions and success or failure. The main headings would be Political, Military, Naval, Air, Economic, and if you tabulate these in parallel columns and insert the main events of each year, you will get a clear and lasting impression which will be of the utmost value for subsequent detailed study. There are several "Chronologies" published which can be referred to for help.

The next book to tackle is "Naval Operations" by Corbett and Newbolt. These five volumes are not so formidable as they look and you will find little difficulty in getting through them. Except in cases where definite lessons are to be learned, it is unnecessary to follow the movements of individual destroyers and other small craft which are occasionally set out in minute detail.

After "Naval Operations," I recommend you to read Fayle's "Seaborne Trade," which is a very valuable addition to our War literature and explains much about trade which is not generally known by the average officer.

Then tackle "The German Submarine Campaign," by Prendergast and Gibson, for this will give you the best description of the submarine peril and how it was overcome.

Bearing in mind what was said earlier about keeping a broad mind, it would be as well to read one or two books of more general history at this stage, such as Winston Churchill's "World Crisis." The books on Russia need the closest study with map and chart, as it is the duty of all of us to have as good a knowledge as we can of that country's coastline and general conditions.

The third purpose to be fufilled by reading has to do with weapons, so that you may be able to form a correct appreciation of their powers

and limitations. This does *not* include a knowledge of technical details of construction which is only confusing and is a matter for specialists. Every executive officer ought, however, to have a very good idea of all weapons and how to use them, because they are the tools he must employ in justifying his *raison d'etre*. Familiarity with some important weapons, e.g., mines, is difficult to obtain for the average officer, but he can do much by reading the various publications carried on board. It is an unfortunate fact that many officers do not even know what professional books are carried, much less do they take them out; but this is a matter that should be put right by Commanding Officers. Some of these books need only be examined so as to know what they contain and, therefore, where to refer, if the need arises. Others, such as the Seamanship Manual and those dealing with tactical exercises, need detailed study.

This part of your reading is concerned rather with the acquirement of knowledge than the extraction of principles, and unless you have this knowledge you are not likely to be in a position to make prompt and correct decisions or prepare sound plans, and I therefore recommend it as the most important of the three headings into which I have divided your reading, at any rate in the earlier stages of your self-training. It is, moreover, just as mistaken to neglect the study and development of material as to neglect the study of its use, and the correct thing is to recognize their interdependence and proceed accordingly with good judgment. The French, in their war plan, were devoted to the "Principle of the Attack" and had unfortunately failed to realize the power which weapons had achieved when the Great War began. It was not until they had sustained enormous losses in the 1914 offensives that the overwhelming power of the German machine guns, even against the most gallant infantry attacks, was realized. On the other hand, the Germans had studied both the development of weapons and their use and they accordingly reaped the benefit both ashore and afloat.

There is one final point I want to emphasize, namely, the necessity for training yourself to express your meaning clearly and without ambiguity, whether verbally or in writing.

As regards writing, you can practise clarity in the course of writing ordinary letters, whether Service or private. It is also an excellent plan to write out a precis, or your observations if you prefer, of those portions or chapters of your reading which appear sufficiently important. If you can get some other enthusiast to criticise your efforts, so much the better, and you will learn something by criticising his in return.

Some people affect to think that ability to talk well is not a desirable asset for a good officer, but this view is usually held most strongly by

the tongue-tied or by those who have nothing to say. Anyhow, it is a mischievous and incorrect view. Any plan of action, however well conceived, needs for its success the intelligent co-operation of all concerned including, may be, Cabinet Ministers, Civil Servants and members of the other Services, not necessarily well versed in technicalities. Lucid, verbal explanation, including a well-ordered arrangement of facts and arguments together with a reasonable facility of expression in ordinary language are, therefore, highly desirable attainments and should be cultivated. You can greatly increase your powers of verbal exposition by giving lectures on any subject, either to officers or men and by inviting subsequent questions, the answering of which will give you still further practice.

All this advice may seem to be rather a council of perfection and it is intended to be so, for, unless one has an ideal difficult to attain, it is not possible to put forth one's best effort. You will remember, however, that I stressed very strongly at the beginning the necessity for an officer to be first and foremost a man of action and nothing I have said is intended to encourage an officer in any way to become a bookworm. If the plan compressed into these few pages seems somewhat big, remember that its execution will be spread out over many years, and it is only a matter of pegging away steadily, little by little, to achieve your object, while still leading an active life. The great commanders of the past were all men of action who had also studied their profession deeply and I cannot do better than end up with the oft-quoted advice "Go thou and do likewise."

# SOUTH PERSIA DURING THE GREAT WAR

By Lieut.-Colonel F. A. Hamilton, O.B.E., F.R.G.S.,
late 3rd Cavalry, Indian Army. (*A.A. and Q.M.G. in Shiraz*, 1917-18).

THE events that took place in Persia during the Great War are not only of considerable interest in themselves, but they illustrate the difficulties under which any future military operations in those regions would have to be conducted. These difficulties arise from two causes: the configuration of the country, and the character of the population.

Persia consists mainly of mountain ridges and desert; it is indeed very similar to Baluchistan. Water is scarce; but where it is found, the country can become very fertile. Elsewhere, the frequency of mountain passes, defiles, deserts and valley render road-making both difficult and laborious. There are practically no railways. Before the War the Russians had constructed some roads in North Persia to link the important towns, such as Tabriz–Teheran–Enzeli–Kermanshah–Isfahan. On these roads carriages could travel in dry weather, but only with great difficulty in the wet season. Elsewhere the roads were no better than mere tracks practicable only for pack transport.[1]

The inhabitants of the towns are artisans, labourers and traders; the population of the villages is agricultural, fairly civilized, moderately industrious, but the reverse of warlike. The carrying trade depends wholly on caravans of pack animals owned by *charvardars*, a hard-working, honest and courageous lot of men, by far the most reliable in Persia. In addition there are found scattered all over Persia the *Iliyat* or nomadic tribes, flock owners who migrate in the autumn from the highlands, or *Sardsir*, to the lowlands, or *Garmsir*, for the winter months. These consist of Turkomans in the North, Baluchis in the East and South-East, Khamseh Arabs in the middle South and Turkish tribes, such as the Qashqai and Qashquli, in the South-West and West. The Bakhtiaris and the Kurds in the West are of pre-Turkish origin. These nomadic tribes are all well armed with small-bore rifles, and possess a good supply of ammunition. They are very warlike and fight among themselves, while they oppress the non-warlike townsmen and villagers

[1] Note.—Owing to the greater energy displayed by the administration of Persia since the Great War a number of good motor roads have been constructed.

or loot caravans. Though well mounted and good horsemen, they have no organization and fight much as do other Arabs. Control over these nomadic tribes by the central and provincial Persian governments grew, both before and during the War, somewhat shadowy, and the tribes became better armed. By 1914 they were almost independent, and paid practically no revenue to the government of Persia.

During the War the central authorities at Teheran maintained the pomp and outward forms of regular government. The ruling classes or grandees, however, were all corrupt, and everyone and everything had his or its price. Provincial governors bought their offices, usually at each change of cabinet, and hastened to make up for lost time and arrears by sub-letting deputy governorships, embezzling local revenues and living on the unfortunate cultivators and *charvardars*. Our dealings with Persian officials during the War were tinged with a certain element of comic opera; sometimes they were our hostile friends and at other times our friendly enemies. The only way to touch their hearts was by means of palm oil.

On the outbreak of war Persia declared for neutrality, but was helpless to prevent others from violating that neutrality. German plans had been made beforehand, and parties of Germans and Austrians, assisted by Turks and such other mercenaries as they could raise, entered Persia, chiefly from Mesopotamia, making their way to the chief towns such as Isfahan, Shiraz, Yezd, Kirman and Meshed. They attacked British consulates, looted the British-owned Imperial Bank branches, and made prisoners of consuls and merchants; even women and children were carried off. Their main idea was to destroy British and Russian prestige in Persia and to foment trouble in Afghanistan and along the North-West Frontier by means of agents who were despatched there through Persia. During the Winter of 1915, owing to German incitement and German money, trouble occurred in Makran; in the South-East of Kelat; on the Sarhad–Sistan border, where German parties penetrated into Afghanistan; among the Mahsuds of Waziristan; and among the Mohmands who raided our British-Indian territory.

Minor expeditions had to be undertaken at all these points. In June, 1915, Indian troops were sent to occupy a line from Sistan to Birjand, whence the cordon line was continued by the Russians *via* Meshed; Indian troops also occupied Khwash and operated against and defeated the Damani Baluch tribes of that district. A small column from Makran temporarily occupied Persian Baluchistan, but was withdrawn in 1916. On the other hand, in the West and centre of Persia these German parties had their own way and their eviction was called for. The Persian Government, being helpless, accepted the offer of the British to restore law and order.

Before proceeding further it should be explained that prior to the War there existed in South Persia a force known as the Swedish Gendarmerie. This force had been raised in 1910 as a counterpoise to the force of Russian Cossacks or, more correctly speaking, the Russian force of Persian Cossacks in the North of Persia. The cost of this Gendarmerie was mainly borne by the British, but it was officered by Swedes, and at the outbreak of war several of these Swedish officers left their posts and some of them appear to have helped the Germans, even if they did not actually join them. The rank and file were in arrears of pay and some of them joined the Germans, whilst others remained in a mutinous state, living on the country in true Persian fashion. Such was the condition of this force at the time the British troops first went to South Persia in 1916.

At that time Sir Percy Sykes with a few British officers and a small escort of Indian troops landed at Bandarabas and marched to Kirman. In this place were the remnants of the Kirman portion of the Swedish Gendarmerie. Sir Percy Sykes took over these men, paid them to date and started the Kirman section of the South Persia Rifles. He left a few capable and experienced officers of the Indian Army to organize and develop a force which eventually became the Kirman Persian Brigade, and remained loyal to the British to the end, giving no trouble. The Germans, Austrians and Turks of this province were captured and sent to the coast in charge of a Persian Prince whom Sir Percy Sykes trusted. Unfortunately, his escort let them escape, no doubt for a suitable *quid pro quo*. Thereupon they collected some tribesmen and attacked a detachment of Indian troops at Saidabad. They were, however, driven off and eventually rounded up in the desert. Sir Percy Sykes next marched to Isfahan via Yezd, and joined a Russian detachment which had recently arrived from the North. He remained about ten days in Isfahan with this detachment, which was most friendly to the British, and talked over various matters with their commander.

About this time a new Governor-General of the province of Fars, Prince Farman Farma, an uncle of the Shah, accompanied by Lieutenant-Colonel Gough as consul, and a Persian escort from Teheran, went *via* Isfahan to Shiraz, the capital of Fars. Sir Percy Sykes with his column followed them to Shiraz, arriving about September, 1916. About sixty Germans and Austrians were rounded up and imprisoned in Shiraz in charge of the Governor-General, and were eventually sent to Teheran, and the remnants of the local Swedish Gendarmerie were taken over by the British, given their arrears of pay and formed into the nucleus of the Fars Brigade of the South Persian Rifles. In the end, however, most of this old Gendarmerie had to be got rid of, as the men were mutinous and quite useless.

Previous to the arrival of the British in Shiraz the German consul was a man called Wassmuss, a man of remarkable ability, who hated the British intensely. He it was who organized the attacks on the British consulates, the looting of the Imperial Bank of Persia and the capture of women and children. On the arrival of the British in Shiraz in September, 1916, Wassmuss fled to Kazerun on the Bushire road, and threw himself on the mercy of Solat-ud-Dowla, chief or *Ilkhani* of the Qashqai tribesmen, with whom he took refuge for a year or more. There he lived on as a tribesman, and in his native costume was almost indistinguishable from a Qashqai chief. This extraordinary man, with a few companions, plenty of funds and ammunition, soon became a controlling influence amongst the tribesmen between Shiraz and Bushire from his headquarters at Kazerun.

With the object of capturing Wassmuss and his band and occupying Kazerun, a small column of Indian troops and South Persian Rifles attempted to reach Kazerun from Shiraz on 25th December, 1916, but met with a reverse in the mountainous valley of Dasht-i-Arjin, and were compelled to retreat to Shiraz. This was a distinct blow to British prestige, and on receiving Sir Percy Sykes' despatch, the Indian Government decided to send reinforcements of Indian troops and a competent staff to Shiraz. Accordingly, a whole divisional staff and reinforcements were sent in February, 1917, via Bandarabas to Shiraz, which they reached in April, 1917, after a march of 430 miles. The reinforcements included the Burmah Mounted Rifles, 16th Rajputs, a company of the 124th Baluchistan Infantry, and numerous instructors and other men drawn from British cavalry and infantry. The march of this column through the country and the arrival of the troops had a very good effect on the tribes. By using money and diplomacy the tribesmen were kept fairly quiet for a year, during which time the South Persian Rifles were reformed, equipped and trained on similar lines to British troops and with the same organization. There were seven battalions of infantry, two pack batteries and two companies of sappers and miners, with departmental units and transport units of mules, camels and donkeys. The South Persian units had three British officers and eight to sixteen British N.C.O. instructors. The Indian troops, now totalling 3,000, formed the backbone of the South Persian Force.

Expeditions were then undertaken by columns of Indian troops and South Persian Rifles in the Fars and Kirman Provinces to punish the raiding tribes, to establish posts for the control of the main caravan routes and to restore law and order. A good deal of fighting took place in the course of these small expeditions and in dealing with attacks on escorted caravans and military convoys. The moral and military value

of the South Persian Rifles improved rapidly, but they were still of uncertain value without the assistance of the Indian troops.

The winter of 1917–1918 was quiet, and trade prospered in South Persia, but this state of things was not to last for long. Interrupted messages and special information from various sources proved that the enemy were making large scale preparations for upsetting conditions in Persia in 1918. The Russian Revolution in 1917 caused matters to go from bad to worse. German money was freely spent in Teheran and all over Persia, till finally instructions were sent from Teheran that the British and Indians were to be either exterminated or driven out of Persia. Fortunately, some welcome reinforcements of Indian troops arrived from India about this time, namely on 16th May, 1918.

The news of the German offensives of March, April and May, 1918, in France, combined with the Bolshevik break-up in Russia, convinced the Persians that our enemies were going to win the War. About this time, April, 1918, correspondence was seized which showed that plots and intrigues were on foot to corrupt the South Persian Rifles. The posts on the Shiraz–Isfahan road were held by them. All these garrisons now deserted and went over to the tribesmen with their arms and ammunition; but some Persian officers and men were caught near Isfahan and executed. It was next discovered that the South Persian Rifles in Shiraz were being tampered with by Persian officials. Consequently, several Persian officers were arrested, and the road posts were taken over by Indian troops, one company being sent up the Isfahan road, while a platoon took over the important store and fort at Dehbid; the rest of the Indians went to Abadeh, 200 miles North of Shiraz.

One very important post on the Shiraz–Bushire road, the caravanserai of Khaneh-Zinian, 32 miles West of Shiraz, was held solely by South Persian Rifles. This post would have been relieved by Indian troops if there had been time, but the course of events anticipated this relief. The northward migrating Qashqai tribesmen began to give trouble at Khaneh-Zinian, and it became evident that they were prepared to snatch at any pretext to attack the British. The theft of three donkeys from the post of Khaneh-Zinian led to shots being fired, and fighting then began. A small column of South Persian Rifles was sent from Shiraz to assist the garrison at Khaneh-Zinian, and the tribesmen were defeated and driven off, but as soon as the troops returned to Shiraz, about 15th May, 1918, some 2,000 Kazarunis and tribesmen advanced and besieged Khaneh-Zinian. Very shortly after the Persian garrison mutinied, murdered their British officers and instructors, threw their bodies into a well and let in the tribesmen.

Meanwhile, Wassmuss was distributing German money, arms and ammunition freely amongst the tribesmen, and was directing operations from Kazerun. At the same time, the main Shiraz column was punishing tribes in the direction of Niriz, and returned to Shiraz on 16th May. During the 17th and 18th the various units and reinforcements were reorganized. The town of Shiraz was in a ferment, and *mullahs* were openly preaching against the British. The lines occupied by Indian troops and certain more trustworthy South Persian Rifles were put into a state of defence, extra supplies were collected in anticipation of a siege—all in the face of open opposition by Persian officials.

On the evening of 18th May the column, consisting of about 1,600 Indian troops, marched towards Khaneh-Zinian and camped at Chinar Rahdar at the entrance to the pass into the mountains, 9 miles away. It was known that the Solat-ud-Dowla with about 6,000 well-armed tribesmen was camped in a valley flanking the Khaneh-Zinian road. Our secret service information proved good and reliable. The column attacked Solat's force at dawn on 19th May, when the mountain and machine guns found good targets. By sunset the tribesmen were in full retreat, having lost about 700 killed and wounded. Our casualties were under 60. The tribesmen, mostly mounted, attacked again and again with the greatest gallantry, their object being to envelop our force and cut us off from our line of retreat on Shiraz, but they could make no headway against the fire of the Indian troops, who occupied a very strong position. They were afterwards reported to have said that they could have dealt with the British had it not been for the guns which turned their livers to water.

On 20th May, after continuing the pursuit of the Solat for 6 or 7 miles, the column returned to the Khaneh-Zinian road, to be met by fugitives from that post, who were arrested; and from them the commander of the column first heard of the mutiny at Khaneh-Zinian, on receipt of which news he abandoned his intention of relieving that force. He also received news from Shiraz that the situation had grown worse. Rumours were being spread that the Indian troops had been cut up in the hills, and that all the South Persian Rifles were going to rise against the British. The column had to return at once to Shiraz, in which place only a small garrison of Indian troops remained at headquarters. The South Persian Rifles were in gardens adjacent to the Indian troops, and might have mutinied at any moment had the tide turned against the column.

During June and July the valley of Shiraz was surrounded by 4,500 Qashqai and 1,500 Kazarunis, all telegraphs being cut. Close at hand there were also about 2,000 Arabs, who hated both sides, sitting on the

fence. When Shiraz was first cut off and the tribesmen were creating a somewhat dangerous situation, the Governor-General, Prince Farman Farma, who was on the whole friendly to us, lost his head. He was found weeping in his office, saying that his end was coming and that he would be dragged out into his own courtyard to be hanged. When told to cheer up, and reminded " you can but die once, Your Highness," he replied, sobbing, " It is all very well for you ; you are a soldier and are accustomed to being killed ; but I am a Persian prince, and I do not like it." At this time news came through that the South Persian Rifles cavalry regiment and infantry battalion at Abadeh had mutinied, joined the local tribesmen, and besieged the small garrison of British officers and N.C.O's of the South Persian Rifles with the Indian company.

The tribesmen around Shiraz were attacked several times by columns, composed mainly of Indian troops, reinforced by a faithful remnant of South Persian Rifles from Shiraz. These men were cavalry, composed of Tabrizi Turks, who would fight very gallantly for anyone who would pay them well. The column made sorties once every week or ten days, drove the tribesmen back into the hills and then retired back into Shiraz again, always followed up by mounted tribesmen in large numbers of whom the guns and machine guns took especially heavy toll. During one action at Ahmedabad they lost between 500-600 killed and wounded, our casualties being only about 30 and 36 ponies, the Burmah Mounted Rifles who did magnificent work all through this period and were invaluable in all actions.

Quarrels and disputes then arose amongst the various sections of the tribes. By various means certain tribes, including the Arabs, were won over to our side, and the Solat was finally defeated in an engagement on 8th August, 1918, after which he was pursued for 100 miles, and looted by the 2,000 Khamseh Arabs who had remained neutral, as well as by some of his own men who turned against him. Finally, a mixed column of Indian troops and South Persian Rifles was sent to Abadeh, where the small garrison was relieved just as the enemy were sapping into their defences. Cholera and influenza had made terrible havoc of the garrison.

In October and November, 1918, there was a virulent outbreak of influenza, and at Shiraz 15,000 inhabitants died out of a population of 46,000. At the post of Niriz on the lines of communication, 2 British officers and 95 Indian ranks died out of a total of 120, while the column at Firuzabad lost 40 per cent. of its strength in ten days. The tribesmen of Fars were said to have lost half their numbers, and the Qashqais could only muster 30,000 men armed with rifles. The tide of war in

Tabriz.
Urmia
L. Urmia.
Feish Khabur.
Zakho
Amadia.
Nisibin
Dohuk
Mosul
Zab R.
SOUTHERN
Great
Rowanduz.
KURDISTAN
Zab R.
Kirkuk
Lesser
Jebel
Hamerin
Kifri
R. Diala
Ahmedabad.
SYRIA
Abu Kemal
Anah.
Khaniquin
Qizil Robat.
Hamada
Kermanshah
Persso-Mesopotamian-Frontier
BAGHDAD
IRAQ
Kerbela
Najef
R. Euphrates
R. Tigris
Dizpil
BASRA
PERSIAN
ARABIA
Scale of Miles
0 25 50 100 200 300

CASPIAN SEA
Enzeli
Kelat
Meshed
Teheran
Hamadan
nshah
Koum
PERSIA
Birjan
izpil
Isfahan
Yezd
Aliabad
Abadeh
Sistan
Dehbid
Kirman
Dashtii-Arjin
Kazerun
Khaneh-Zinian
Shiraz
Chinar
Saidabad
Niriz
Bushire
Firuzabad
PERSIAN GULF
Bandarabas

France was now turning against the Germans, and the various Persian authorities again became our friends.

There was little more trouble in South Persia, beyond expeditions to rescue our new allied tribesmen from attacks made by their enemies. General Douglas's force from Bushire began to advance in October, 1918, and moved up slowly, road-making by stages. There was some skirmishing but no serious fighting, and a column from Shiraz joined hands with him in March, 1919. This entire force, which was engaged in opening up the Shiraz-Bushire route, included no fewer than 20,000 fighting men and followers. There were considerable difficulties in supplies and transport, but these were overcome by constant hard work. The restoration of law and order was successfully achieved, the caravan routes were re-opened, while the garrison of Shiraz was at length relieved.

It is difficult to estimate the exact value of the services rendered by the troops in South Persia during the War. Their main task was to put an end to the German-led bands which were destroying the little civilization that still existed in the country. Persia was one of the ways to India for enemy intrigue and propaganda, and Sir Percy Sykes' force by its action greatly contributed to the failure of the German mission to the court of the Amir of Afghanistan.

As soon as outside influence and intrigue ceased, the South Persian Rifles settled down into a very useful gendarmerie, capable of policing the country and preserving law and order. The type of recruit improved, and warlike men from the tribes were enlisted. These troops fought with success in several minor expeditions unaided by Indian units, which by that time had been withdrawn. It is regrettable that the Persian Government should have allowed this force to be disbanded, which it finally was in November, 1921, on the grounds that the Mejlis could not find the money to finance it.

# AIR EXERCISES, 1932

By Major F. A. de V. Robertson, V.D.

ALL Air Exercises arouse misconceptions in the popular mind. When they took the form of defending London from raiding bombers, as did those of 1927, 1928, and 1931, the good citizens watched innumerable bombing formations flying over their heads day after day, and saw and heard the same thing going on by night. That section of the Press which believes that readers are only attracted by sensation and thrill, harped loudly on the success of the bombers, and drew pictures of the theoretical destruction of the Air Ministry and other buildings. The consequence was a considerable scare and a general belief that any enemy could bomb London at will. One section clamoured that our Air Force must be multiplied immediately, while the pacifist party were even more assertive that our, or at least their, safety lay in universal disarmament, and particularly in the disbandment of all air forces. In neither case was the effect upon the public salutary.

The Air Exercises of 1932 attracted less attention because they did not concern London, and also because Press representatives were not invited to attend. Instead of dealing with attacks on London from the South and East, they tested the defences on the western side of the capital. The East coast on the one side and Wales on the other were out of bounds. Narratives of the course of events were drawn up, and from them it is possible to make certain deductions, or at least reflections, on the progress of our air defence organization.

The forces engaged were as follows :—

The defence, under Air Vice-Marshal F. W. Bowhill, C.M.G., D.S.O., consisted of twelve fighter squadrons :—

| | *Aircraft.* | *Station.* | *Used for day or night work.* |
|---|---|---|---|
| No. 23 | 6 Bulldogs<br>3 Demons | Kenley | Day. |
| „ 32 | Bulldog | Kenley | Night. |
| „ 25 | Fury | Kenley | Day. |
| „ 1 | Fury | Northolt | Day. |
| „ 19 | Bulldog | Northolt | Day. |
| „ 41 | Bulldog | Northolt | Night. |
| „ 3 | Bulldog | Upavon | Night. |
| „ 54 | Bulldog | Upavon | Day. |
| „ 111 | Bulldog | Upavon | Day. |
| „ 29 | Bulldog | Upper Heyford | Day. |
| „ 43 | Fury | Upper Heyford | Day. |
| „ 56 | Siskin | Upper Heyford | Night. |

In addition a composite squadron composed of Nos. 501 and 504 (Bomber) Squadrons was placed under the command of Air Vice-Marshal Bowhill for observation purposes. It was stationed at Bristol, and its activities were not mentioned in the narrative of operations. It may be noted that the three Fury squadrons were all moved inland from their usual coast aerodromes, and were used solely for day fighting, although on one occasion a Fury of No. 1 F.S. was reported to have shot down a night bomber—a Hinaidi of No. 99 B.S. On each of the four stations there was one squadron detailed for night work and two for day work.

The hostile, or Southland forces were under the command of Air Vice-Marshal Sir Tom I. Webb-Bowen, K.C.B., C.M.G. They consisted of seven day bombing squadrons and seven night bombing squadrons :—

| *Day Bombers.* | | *Night Bombers.* | |
|---|---|---|---|
| No. 12 | Hart. | No. 7 | Virginia. |
| „ 18 | Hart. | „ 58 | Virginia. |
| „ 33 | Hart. | „ 9 | Virginia. |
| „ 35 | Fairey 3 F. | „ 10 | Hinaidi. |
| „ 40 | Gordon. | „ 99 | Hinaidi. |
| „ 602 | Wapiti. | „ 502 | Virginia. |
| „ 603 | Wapiti. | „ 503 | Hyderabad. |

The location of the bombers is of less importance for our purpose, as their stations were supposed to be overseas, and they were obliged to go out to sea and cross the coast before commencing a raid.

The targets were represented by cameræ obscuræ near Milton, Wantage, Wallingford, Henley-on-Thames, Coventry, and Buckingham.

Before trying to extract lessons from these Exercises, it will be well to be clear on the points which it was desired to test. These were not manœuvres in which one commander was pitted against another, but definitely Exercises in certain features of the air defence organization. Successful air defence consists of three separate operations : (1) Detection and reporting ; (2) Interception ; and (3) Destruction or repulse. For the purpose of these Exercises the possibility of our bombers destroying enemy raiders on their own aerodromes (on the principle that attack is the best form of defence) has to be left out of consideration.

Of these operations, the first is the business of ground units and agency. In the first place intelligence agents may be able to send warning of the start of a raid. Secondly, shipping in the Channel may be able to report its approach. When it reaches the coast, the work is taken over by the Corps of Observers. They will be seconded by searchlights, and by anti-aircraft guns when the visibility is good. It is on the accuracy and speed of the reports by the Observers that the defence staff relies.

The second operation is interception by fighter aeroplanes. By day, provided that prompt and accurate reports have been received, the success of this operation depends largely on the sharp eyes of the fighter pilots. After taking off, they may receive further information by wireless and they may get some help from the gunners. In clear weather aircraft are more easily seen from the ground than from the air. By night the fighters are almost entirely dependent on the searchlights.

The third operation, namely the destruction or foiling of the raiders by air combat, is a matter of what may be called minor tactics. With these tactics the Air Exercises were not greatly concerned. It is necessary to emphasize this point, because so often in the past there has been a tendency to draw conclusions from the number of casualties awarded by the umpires. These Exercises were not intended to test the ability of a squadron of Furies to overcome a squadron of Harts, or anything of that sort. Such points are tested, so far as test is possible, with camera guns, during the annual affiliations of one fighter squadron with one squadron of bombers or flying boats. On occasions such as Air Exercises, when a number of squadrons are operating in a confined area, it is necessary to restrict their movements in the interests of safety; and neither bombers nor fighters are allowed to carry out fighting evolutions which would be necessary in war. An arbitrary formula for assessing casualties is used, based, it is understood, on the relative strengths in numbers and materiel of the forces engaged. No formula can take full account of personal courage, skill in tactical manœuvres, marksmanship, etc., therefore the award of casualties must inevitably be artificial. The only wise thing is to leave the casualties out of consideration. The Exercises were intended to test detection, reporting, and interception, and practically nothing else.

The bomber squadrons were certainly tested to some extent, but only to a limited one. They were allowed very little freedom. The area was somewhat restricted, and the targets in it were laid down. They could not range over England and bomb any important town which they thought would be undefended. In approaching their targets they were given set courses on which to fly, and beyond concealing themselves in clouds when possible, they were given practically no tactical liberty. When the Observers were not at work the bombers had to report their own progress by wireless, and they were not allowed to change course immediately after sending out such a report, so as to puzzle the defence. Their navigation was tested, and their bombing was tested. When they arrived over the target, the fighters were not allowed to worry them as they aimed their bombs. For the rest, they played the part of the *corpus vile* on which the fighters were to experiment. None the less, Air Vice-

Marshal Sir Tom Webb-Bowen showed his initiative within the limits allowed him by instituting raids by Wings, each consisting of two or three squadrons.

Of the elements necessary to effectual air defence, many were absent from these Exercises. Of course there were no intelligence agents, and no reports from shipping. These elements have always been absent from Air Exercises. What was more important, there were no anti-aircraft guns and no searchlights. Opinions still differ as to the results which may be expected from A.A. guns. They are certainly far more accurate and of longer range than they were during the war; but they cannot counter the aeroplane's ability to move in any one of four directions after the shell has left the muzzle. Raw pilots who fly on a straight course will probably fall victims to the guns, and the latter produce a moral effect. A stout-hearted pilot is seldom deterred by that. In fine weather the guns are undoubtedly useful in drawing the attention of the fighters to the raiders.[1]

About the utility of searchlights there is no doubt at all. By night there can be no reasonable expectation of interception except by the help of searchlights. In these days of inventions, even clouds do not always protect a bomber from the attention of the searchlights, and they can follow the course of a machine which is hidden from view. Where the beams most do congregate, there the patrolling fighter will fly to investigate. The beams may not actually have caught the bomber, but they may make him visible to the fighter; or the latter will search round until he sights the flames from the bomber's exhaust. Attacking from the darkness, the odds should be all on the fighter, and the bomber may well be shot down before its crew know that they have been attacked.

Searchlights being absent this year, some night bombers were sent through with navigation lights on. These were almost invariably intercepted and attacked. Those which were allowed to fly without lights almost invariably got through unnoticed.

For reasons probably connected with economy, the War Office did not supply guns and lights; but their absence added greatly to the artificial nature of the Exercises. It was a glaring example of the unwisdom of divided responsibility; of not placing the Air Ministry in entire charge of all the elements of air defence. The only rational arrangement would be for these batteries and searchlight units to belong, not to the Territorial Army, as at present, but to the Auxiliary Air Force. Economy is necessary, but each department should manage its own economies. It is not reasonable that the War Office should practise

[1] See articles on "Anti-Aircraft Gunnery" in the JOURNAL for May, 1932.

economies to the detriment of air defence. That way lies disaster in time of war.

The Observer Corps were on duty every evening from 7 p.m. to midnight. In peace time it would be difficult to ask more than that from a body of unpaid volunteers. Though these men only took a partial share in the Exercises, it was sufficient to prove the remarkably high pitch of training which they have reached. It appears that the reporting of raids was actually quite as satisfactorily performed when they were on duty as when the raiders were reporting their own progress by wireless. It would be hard to pay the Observers a higher compliment than to put that on record. It is extremely satisfactory to know how reliable their organization has become, and the men themselves deserve the warmest gratitude from their fellow citizens.

While on this subject, a word of praise should be given to the two bomber squadrons of the Auxiliary Air Force which took part in the Exercises, namely the City of Glasgow and the City of Edinburgh B.S. Operating over strange country, the Scottish pilots showed excellent abilities in navigation, and proved themselves worthy to work beside the regular R.A.F. squadrons. Our Auxiliary Air Force has reached a very high standard of efficiency.

In searching for lessons to be drawn from these Exercises, the scope of the enquiry now seems to have been considerably narrowed down. All the estimated casualties may be disregarded. No lessons were sought in actual fighting tactics, and we know no more than we did before about the comparative merits of single-seater fighters and two-seater fighters. Owing to the absence of searchlights, no important lessons could be learnt from the night operations. The Observer Corps demonstrated their efficiency. The bombers were not expected to teach lessons except as regards their accuracy in navigation and bombing. Nevertheless, the A.O.C. Southland did initiate concerted bombing on different targets and mass raiding by bomber Wings. The success of such tactics could only be tested by real fighting, but it would seem probable that when three squadrons raid together they would be less subject to piecemeal losses, and therefore more bombers might expect to get through to their target. Such a large formation would be easy to locate and to follow, and doubtless the object of these tactics was not to escape interception but to crash through it to the objective. It is a question which should be considered whether such a form of attack does not constitute the greatest danger to our defence organization.

There remains the question of interception of daylight raids by single squadrons, the testing of which was the chief object of the Exercises. We must perforce fall back on statistics, though well aware how fallacious

such things may be. The raids may be summarized in one way as follows :—

| | *Number of raids not intercepted.* | *Number of raids intercepted on way in.* | *Number of raids intercepted on way out.* | |
|---|---|---|---|---|
| Monday evening (18th July) .. | 2 | 2 | 2 | |
| Tuesday morning .. .. | 0 | 6 | 1 | |
| Tuesday evening.. .. .. | 5 | 2 | 0 | |
| Wednesday morning .. .. | 0 | 4 | 3 | |
| Wednesday evening .. .. | 0 | 3 | 2 | |
| | (2 raids failed) | | | |
| Thursday morning (Wing raids) | 0 | 3 | 0 | |
| | 7+2 | 20 | 8 | Total raids : 37 |

This table merely shows whether a raid was intercepted or not. There were sixteen cases of attacks subsequent to the original interception, all of which would probably have had the result of weakening the enemy's striking power on future occasions. On the Thursday morning three raids are shown, each by a Wing, with all seven bomber squadrons engaged. These raids probably did not expect to escape interception, and so the fact that they were intercepted may not count full marks to the defence. On the other hand the figures could be made to look more favourable to the defence if on the Thursday we put down that seven squadrons made raids and there were seven interceptions.

Of the total of thirty-seven raids, seven escaped interception altogether, five of them on the Tuesday evening. No reason is apparent for this breakdown of the defence on one particular evening, although of course the weather may have had something to do with it. Six other raids were not caught on their way in, and presumably the targets suffered the full force of their bombardment. Interception on the return journey does not save the target that day, but should reduce the enemy's strength for next day. So the defended area suffered the maximum of damage on thirteen occasions out of thirty-seven, and possibly extra attention when the Wing raids took place. If the sixteen cases of subsequent attacks by fighters are taken into account, the figures may be put this way :—There were thirty-seven raids, and the raiders were attacked forty-four times.

From these various readings of the figures it would be possible to argue in various directions. The targets would certainly seem to have had a bad time. On the other hand it seems scarcely credible that seven day bomber squadrons could have kept up such pressure for six periods in the face of the constant interceptions to which they were

subjected. When the nerves of the pilots had begun to get a bit frayed, the guns, which would be there in real war, would still further damage their morale. One may perhaps reckon that fighter pilots, defending their own country, would maintain their aggressive spirit in the face of casualties longer than the invaders. This, however, is an excursion into the psychological side of war, with which Air Exercises are not concerned. In them every man is a hero, and casualties always live to fight again on that and other days.

We may find no little comfort from Major-General E. B. Ashmore's book "Air Defence." On page 151 he writes:—"In the War, the Germans lost altogether 4.8 per cent. of the aeroplanes they put over England, but these raids included many coastal attacks in which gun-fire is the only defence. In 1918, when the attacks were mainly on London, the percentage brought down rose to 14[1]. The defence contributed, to say the least of it, to the fact that bombing ceased during the last six months of the war." In the last raid, on Whit Sunday, 19th May, 1918, the Germans sent over between thirty and forty bombing machines. Of these, three were destroyed in air combat, three were shot down by guns, three crashed completely on landing in Belgium (probably having been damaged in air combat), and one landed in Essex with engine failure. The raid cost the Germans from 25 to 33⅓ per cent. of their strength, and they never came over again. Yet the scheme was not then in full working order. It would appear from this precedent that our defence in the recent Air Exercises would at the least have very seriously discouraged the raiders from persisting for long in their very expensive attacks.

[1] It must be remembered, however, that the German bombers when fully loaded had a poor performance and a ceiling of under 10,000 feet. By the latter year of the War, too, the pilots had deteriorated considerably, for the best were retained on the Western Front.—EDITOR.

# WAR GAMES [1]

By Major A. L. Pemberton, M.C., R.A.

THE war game is perhaps the most difficult of all military exercises to design and to conduct. It throws a constant strain on the imagination of both directing staff and players; and a vast amount of preliminary work is required to produce a game of even limited scope and short duration. It is, therefore, remarkable that so little should have been written on the subject.

*Objects of the War Game.*—In Training and Manœuvre Regulations, Sec. 29 (1), it is said that "the object of a war game is to afford an opportunity for indoor study of strategical, tactical, staff, or administrative problems." But there is another use, which the Regulations do not mention, namely, that the war game also affords an excellent opportunity for exercising the commanders of Territorial Army formations —or others similarly placed—in the functions of their command.

A further glance at the above definition of the object will show that all such exercises may be roughly divided into three types. Thus we can have:—

"A"—A major strategical or tactical exercise.

"B"—A minor strategical or tactical exercise.

"C"—An administrative exercise.

No absolute line of demarcation can, of course, be drawn between any of these three types; each will always contain some elements of the other two. But generally speaking, Type "A" will deal with the operations of formations such as divisions or corps, and will exercise a relatively large proportion of general staff officers; Type "B" will deal with small formations such as a mixed brigade, and will exercise a

[1] These notes represent the condensed experience of some half-dozen war games held during the last four years, in which the author filled a number of different roles.

relatively large proportion of regimental officers; Type "C" will chiefly concern administrative staff officers and directors of services.

As regards Type "B," it might be thought difficult to design an indoor exercise suitable for any force smaller than an infantry brigade with attached troops, since the occasions on which so small a force will carry out extended independent movements are few. But this argument overlooks (1) the Imperial commitments of our Regular Army, and (2) the growth of mechanization. It is, in fact, possible to devise a scheme that shall be applicable to the movements of quite small forces, whether acting in conjunction with a main army or carrying out any of the multifarious police duties that confront our Army overseas, where a very small force may be responsible for the safety of a very large area, provided that the problem is properly studied.

*Preparation of the Scheme.*—The principles to be observed in designing a scheme are the same for an indoor as for an outdoor exercise, and are fully described in Training and Manœuvre Regulations, Secs. 15, 16, 23 and 38. One point alone seems to call for discussion; what provision, if any, should be made for the control of the operations by the director?

Sec. 32 of the Regulations, which deals with the general conduct of a war game, lays down quite definitely that "the director should not interfere with the initiative of commanders, and must allow them entire liberty of action." But this must not be taken to mean that arbitrary control of the operations by the director is officially discountenanced; on the contrary, there are times at which it is permissible, and other times at which it is expressly encouraged. Thus, Sec. 15 (6) of the Regulations implies the possibility of interference by the director to ensure the inclusion of some "specific tactical or administrative problem," and Sec. 38 (8) impresses upon him the necessity of introducing "the elements of uncertainty and surprise which exist in war."

His task, therefore, is not an easy one, and if it is to be carried out successfully there must be:—

(1) A very careful calculation of time and space when determining the initial dispositions of the combatants.

(2) A clear idea in the director's mind of how the game is expected to work out.

(3) A pre-arranged plan showing how the director can influence the course of the operations.

One cannot, of course, expect to forecast exactly the moves that the opposing commanders will make; but it is generally possible to draw up a list of alternatives that will include these moves; and by thinking over such alternatives one can usually devise a means—intervention by

neutrals, air raid, breakdown in the administrative system, political influence, etc.—of guiding the operations into the desired channels. The method adopted is often of more importance than the matter. It is one of the difficulties of the sham fight, that it allows no outlet for the emotions of the man who has met opposition. Hence, opposition and adversity, though inspiring in war, are often only irritating in peace; and it will add greatly to the enjoyment of a war game if interference by the director be as infrequent and imperceptible as possible.

*Organization of the Directing Staff.*—Again there is no essential difference between the duties of the directing staff in an indoor and outdoor exercise. In both the director is represented at each force headquarters by a chief umpire, with assistant umpires to keep him in touch with subordinate formations and units; and in both it is the duty of the umpires to give decisions. But in the war game there is, of course, more "make believe," since in actual manœuvres the troops are real, and only the horrors of war have to be imagined. In the war game, nothing except the commanders and their staff is real; so that the unopposed moves of units, as well as the effect of fire, etc., have to be checked by the umpires against a table of performances circulated as part of the initial instructions for the exercise.

It is when the opposing forces have come into contact, however, that the difference in procedure becomes most apparent. When a clash takes place between troops on the ground, the umpires of both sides can get together and give a decision on the spot. In a war game, no actual clash ever takes place, and unless the umpires of opposing formations are kept informed of the moves made by the other side, they are powerless to give decisions. Nevertheless, if the players are all working close together, it will be easy for the two chief umpires to meet and settle any doubtful points as above. If rooms are small and scattered—as they sometimes are—chief umpires may have to be kept in touch by a common co-ordinating centre, whose duty it will also be to help the director to maintain his control of the operations.

It follows that the essential elements of a directing staff are:—

(1) An umpire staff, which may include specialist umpires (usually kept centralized for the sake of economy), to deal with air, artillery, engineer, signal, and other problems.

(2) A co-ordinating section.

(3) A narrative section, which may or may not have representatives at force headquarters, and of which the central element may conveniently be combined with the co-ordinating section.

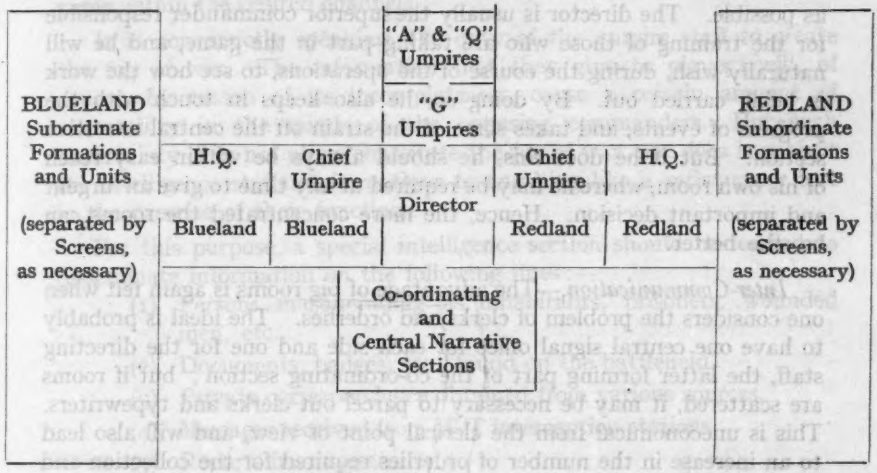
There must, of course, be effective liaison between the director and the co-ordinating section, and between the co-ordinating section and the umpire staff. The former is probably best achieved by relieving one member of the co-ordinating section of all duties within that section, and making him responsible for keeping touch with the director; the latter by having a special liaison officer detailed to run between the co-ordinating section and the chief umpire with each side.

*Organization of the Players.*—The difficulty here is to determine the scale upon which the staffs of formations should be represented. If space were no consideration, it would, of course, be convenient to have every appointment represented. For although the actual work required of the representatives of some of the ancillary arms and services is often extremely small, it is obviously desirable that technical problems should be handled by experts; and when not thus employed, such experts can derive both interest and profit from a general observation of the proceedings.

Unfortunately, however, space is sometimes a very serious problem. It is an indirect object of the war game to provoke discussion between officers of the various arms and services, and this will not occur unless they are accommodated in the same building during the course of the exercise. Hence the frequent necessity for the hire of the whole or part of an hotel; and hotels are not primarily designed for the playing of war games. It may prove quite impossible to fit the whole of a divisional staff into the only room that is available for them, or, having fitted them in, to supply them with the tables and other accessories that they expect to have. The only possible remedy is then to discard the less essential members of the staff. These will, of course, vary with the nature of the war game. But it can be accepted as a general principle that, if detailed orders are required, the individuals responsible for the drafting of such orders should accompany their commanders; and that, of a divisional staff, the G.1, G.3, Intelligence Officer, and Intelligence Liaison Officers are alone essential to all situations; the rest can be curtailed as necessary to suit the circumstances.

*Allotment of Rooms.*—For a small war game of Type "B," an officers' mess may sometimes provide a suitable setting. As numbers increase, however, an hotel has usually to be resorted to, and this, as we have seen, may introduce complications. It is, therefore, important to have some definite system on which to work when planning the lay-out of the available accommodation. If some of our ideals have to be sacrificed to reality, it is necessary that we should know which we are prepared to surrender first; otherwise we shall soon find our thoughts wandering hopelessly round a vicious circle.

The ideal lay-out would be something like this :—




*Note.*—The "G" umpires are the air, artillery, engineer, etc., umpires referred to above, in the section on "Organization of the Directing Staff."

It will be seen that there are five principles embodied in this lay-out, which may be stated, in order of priority, as follows :—

(1) Seclusion for the director.
(2) Easy communication between the director and the co-ordinating centre.
(3) Separation of the opposing forces.
(4) Easy communication between the director and chief umpires.
(5) A small number of large rooms in preference to a large number of small rooms, subject to the necessity of seclusion (see (1) above).

It is not suggested that another order of priority would be wrong; this is a matter of individual taste, and the writer has merely given the order that he himself prefers. Those with experience, however, will probably agree that a secluded room for the director is essential, whereas the dispersion of players among a number of rooms, though inconvenient, need not seriously interfere with the working of the game. It will throw a greater strain on the umpire staffs and liaison officers, but otherwise will have no ill-effect. Indeed, it may sometimes be advantageous to isolate the commander of a detached force working at some distance from the main army, so as to avoid any chance of even innocent collaboration.

There is another reason for keeping rooms concentrated as much as possible. The director is usually the superior commander responsible for the training of those who are taking part in the game, and he will naturally wish, during the course of the operations, to see how the work is being carried out. By doing so, he also keeps in touch with the progress of events, and takes some of the strain off the central narrative section. But if he does this, he should always be within easy reach of his own room, where he may be required at any time to give an urgent and important decision. Hence, the more concentrated the rooms can be, the better.

*Inter-Communication.*—The advantage of big rooms is again felt when one considers the problem of clerks and orderlies. The ideal is probably to have one central signal office for each side and one for the directing staff, the latter forming part of the co-ordinating section; but if rooms are scattered, it may be necessary to parcel out clerks and typewriters. This is uneconomical from the clerical point of view, and will also lead to an increase in the number of orderlies required for the collection and delivery of messages.

The use of telephones is a debatable point. Training and Manœuvre Regulations, Sec. 32 (8), states that "where the telephone communication, which in similar circumstances would exist in war, can be arranged it will greatly add to the value of the war game as an exercise." But can one ever simulate the circumstances of war? In an hotel, any attempt to do so would be sure to call forth a protest from the other residents, and elsewhere results could hardly be realistic. Hence the telephone, while introducing more personnel—who may have to be transported to the scene of the war game and housed while it is in progress—offers in return only the inconsiderable advantage of practising officers in speaking into a microphone. The writer is, therefore, of the opinion that the installation of telephones is rarely justified. If the war game deals with a staff problem, it may be worth an effort to provide them, but in the majority of games it will suffice if officers who, in the umpires' opinion, could be in telephonic communication are allowed to meet and talk direct to each other.

*Intelligence.*—It is, as we have seen, the duty of the umpire staff to convey to players the results of their own orders and of any contact with the enemy that would have resulted therefrom. Specialist umpires will also keep both sides in the picture regarding the results of air, armoured car, engineer, and other reconnaissances, and the progress of administrative arrangements in the rear of the army. While all umpires will assist the director to introduce with as little disturbance as possible

the various developments that he may regard as necessary to keep the game within the desired channels.

It is not, strictly speaking, the duty of the umpire staff to create the fog of war. The information that they give to players will, of course, by reason of its incompleteness, cause a certain amount of uncertainty in the minds of the opposing commanders. But such uncertainty does not alone constitute the fog of war, nor does it subject the intelligence staffs of formations to anything like a satisfactory test in the exercise of their functions.

For this purpose, a special intelligence section should be formed to disseminate information on the following lines:—

(1) Persons masquerading as inhabitants, prisoners, wounded men, etc.
(2) Documents, badges, etc., found on the battlefield.
(3) Private correspondence obtained from various sources.
(4) Messages received from W/T interception stations.
(5) Reports from agents.

All these items will require to be carefully worked out beforehand, and during the progress of the game the intelligence section must be kept in the closest possible touch with the situation. Hence, it is best located in the same room as the co-ordinating section.

An artistic use of the above methods adds realism to the war game, and affords an opportunity for practising officers in the interrogation of prisoners, inhabitants, etc., and also in the sifting of all types of intelligence. If an officer of proved histrionic ability can be found to represent the prisoners, inhabitants, etc., so much the better; though his talents may have to be displayed with a certain amount of tact and discrimination, for we as a race do not take kindly to the idea of the masquerade.

### The Conduct of a Game.

(1) *Issue of Preliminary Papers.*—In order to preserve, as far as possible, the fog of war, syndicate lists should be confidential documents, and should not be issued until the last possible moment. Each commander will, of course, require a complete list of his own side, which should be attached to his copy of the special idea; and he should also be told the name of the opposing commander, so that the contest may be given the right psychological flavour. All other officers should receive at first merely a notification of their own individual appointments, and an order to report at a particular room on a certain date. On arrival there, they will find a complete list of their own side pasted on the door, or on some irremovable piece of furniture.

The idea of this procedure is naturally to avoid the premature dissipation of the fog that the directing staff have created. It is human nature to leave books and papers lying about on tables, and the insertion of the word " confidential " seems only to spur our evil genii to greater efforts of forgetfulness.

(2) *The Air Factor* is usually of great importance in a war game, and should be kept in the forefront of the picture by issuing, with general and special ideas, locations of peace aerodromes and known peace stations of air formations and units.

(3) *Introduction of Problems into Special Idea.*—It is obviously desirable to produce at least two alternative courses for the initial appreciations. If topography offers insufficient problems, the mobilization centres of the foremost troops can be dispersed, an important and vulnerable city can be used as a bait, or the state of public opinion in an adjoining neutral state can be made to introduce an element of doubt.

(4) *The Production of Orders.*—The ideal to be aimed at in any military exercise is the complete and detailed production of all essential orders and messages. The peculiar circumstances of a war game, however, demand that this ideal should not be carried too far.

In an indoor game, there being no troops, it is customary to reduce the gap between the issue and execution of an order by arbitrarily putting on the clock. In this way one avoids long periods of enforced idleness for the players, and correspondingly increases the scope of the operations that can be attempted within a given time.

Now obviously, the period during which the directing staff will be most inundated with messages will be towards the end of any particular situation, when subordinate commanders have issued their orders, and all are waiting for the final result of the operation to be made known; the very time, in fact, when the director will be most anxious to put on the clock. Hence, orders that are not likely to help the directing staff to come to a decision merely obstruct the game, and are better eliminated.

If the war game deals with a strategical or tactical problem, operation orders may often be reduced to notes showing the intention and an outline plan, including essential administrative arrangements. It is not only time that is saved by the curtailment of paper work. The clerical, and perhaps the directing, staff may also be reduced, and a considerable financial economy may thus be effected.

(5) *The Work of the Co-ordinating Section.*—It is most important that copies of all orders and messages, and records of all decisions made by the directing staff, should be sent at once to the co-ordinating section.

Decisions by the director should be made in the presence of both chief umpires and a representative of this section, who should be summoned by bell as required. Decisions given independently by chief umpires—whose powers in this respect should be clearly defined before the game begins—should be reported immediately through liaison officers.

(6) *Responsibilities of Umpires.*—It is the duty of umpires to see that everyone is kept occupied during the progress of the game, the success of which will depend very largely on their keenness and ability to get through their task. They must know what is in the director's mind, and they must be prepared to find out what is in the minds of the players. The mere passive collection of orders and messages is not enough; for all troop movements and dispositions are fictitious, and if every detail were to be written down on paper the game would never finish. Interrogation, especially of subordinate commanders, will often be necessary to clear up doubtful points.

(7) *Putting on the Clock.*—The object of putting on the clock has been discussed above. As regards method, the Regulations, Sec. 32 (ii) suggest that "where the operations extend over several (imaginary) days the intervals between the situations may sometimes be as long as a whole day (24 hours). As troops come into contact, however, the intervals between the situations should be reduced at the discretion of the director to 6 or 3 hours, and, in cases which involve the decision of a tactical engagement, the intervals may be reduced to 10 minutes."

The underlying principle is that the clock should never be arbitrarily advanced beyond the point at which either commander would, if left to himself, have made some alteration in his plans or dispositions. There may be occasions, however, when time is short and the director wishes to short-circuit a particular tactical engagement—which he thinks will produce no lessons of outstanding interest—and initiate a fresh problem that would develop after this operation had been decided. For example, the advanced guards of both sides may be engaged in close combat, while both commanders are striving to recover or maintain the initiative by the use of fresh formations. In such a case, the director may decide to jump the final stages of the advanced guard battle in order to make time for a blow to be struck by one or all of the new formations.

This may cause some dislocation of thought in the minds of the two force commanders. But the director will, of course, try and discover by interrogation what their intentions are before presenting them with the next situation, and, where any doubt exists, will give them credit for having acted wisely. Hence, the amount of dislocation should be small and not more than might be produced by the actual fortunes of

war. This must, however, be regarded as a method only to be adopted when initial calculations have gone astray, and the scope of the war game has attained a size out of proportion to the time available.

In fact, even in the earlier stages of a war game, the putting on of the clock is apt to be a source of irritation. Generally speaking, the fewer the alterations in scheme time, the better the game. And that explains why this form of exercise is so easily applied to the operations of armoured forces. The increased speed brought about by mechanization has reduced the gap in time between the issue and execution of orders, and has thus obviated the necessity for the arbitrary advancement of the clock.

(8) *Final Conference.*—The final conference is always a matter that requires careful consideration. The first essential is to ensure that all present are conversant with the action of both sides; and this is liable to prove a long and tedious business. But there is now on the market a lantern (Episcope) that will throw on a screen—by means of a series of mirrors—pictures, sketches, etc., in the original. With this and some duplicated sketch maps, the complete situation at frequent intervals can be shown, and the course of the battle can thus be easily followed.

# THE FRENCH AIR BOMBING UNITS IN THE GREAT WAR

*(Adapted from the Militär-Wochenblatt of 11th October, 1932)*

THE Germans have long desired to obtain from a French official source full details concerning the activity of the French bombing units and formations during the Great War. In the absence of any such comprehensive work, the *Militär-Wochenblatt* publishes a brief study of the subject which is derived from the "Vojenské Rojledi," No. 7 for 1932. In this account the growth of these air units is traced from the first day of the war down to the work of the Air Division on the day of the Armistice.

During August, 1914, it is stated, some French reconnaissance pilots, on their own initiative, began taking on their flights a few artillery projectiles of 75, 90 and 120 mm. calibre and dropped them on likely targets. It was only in December, 1914, that a bombing squadron was set up by French G.H.Q. By the middle of May, 1915, there had come into existence four such units, each consisting of four flights. G.H.Q. reserved to itself the definition of bombardment targets, which embraced both military objectives and certain places of importance to military industry. But it was not until the late summer of 1915 that a really systematic plan of bombardment was initiated. As a result of this, Ludwigshafen, 110 miles distant from the front, was bombed; on that occasion the French lost only one machine. On 9th August, Saarbrücken was attacked with a loss of nine machines. The heaviest attack, against Dillingen, was carried out by sixty-two machines.

An attempt was then made to employ the four squadrons as one unit under a single commander. Moreover, as the German anti-aircraft defence had been strengthened, attempts were made to add fighter units to this command. But the results were not satisfactory, and the bombing squadrons were eventually allotted separately to the armies in the field. Attacks on Stuttgart, Trèves and Offenburg were thus carried out independently by these squadrons—always by night, for the French were already abandoning day bombing. Twin-motor "Caudron" machines were used.

During the Verdun fighting the French were hampered by the absence of aerodromes close behind that front. In addition, the French "Voisin" bombers proved inferior to the German machines, so that they never dared come out by day. On the other hand, night flying was not yet properly understood by them. Consequently, the day bombing squadrons

were relegated to other day uses, while only two were converted into night bombing units. These were Flights Nos. 25 and 101—the first two properly organized night-flying units.

Very different was the state of affairs during the Somme fighting. Here the French found excellent aerodromes, perfect flying weather; and they possessed the initiative. The most noteworthy bombing attacks during that summer were the French raid on Karlsruhe where, after causing the death of 208 children, they suffered heavy casualties; secondly, the raid of British naval aircraft on Saarbrücken. At the end of the year the French decided to embark on the mass production of aircraft. Day bombers of the Breguet type were to be constructed.

By April, 1917, all French bombing planes were regularly divided into day and night flying units. The day bombers comprised the one- and two-seater Sopwiths carrying a bomb load of 90 or 270 lbs.; but these machines were to be replaced as soon as possible by the Breguet No. 14. The night-flying units received the new Caproni, as well as all the older machines such as Farman, Voisin and Breguet-Michelin, which were out of date for day work. The squadrons were composed half of day and half of night machines, an arrangement that was said to be utterly mistaken as "nobody could ever sleep, while the C.O. was continuously on duty."

In July, 1917, French G.H.Q. decided to attack the Briey ironfield. With this object in view the 1st Night Bombing Wing was formed and equipped with Caproni and Voisin machines. But the preparations dragged on until February, 1918, and nothing was attempted on a big scale. The Wing was then stationed in Lorraine. In the meanwhile day attacks were carried out on Trèves and Frankfurt, but these ended in heavy French losses. The latter caused day bombing to fall into disrepute, but in spite of that fact, and in view of the now rapid output of the Breguet 14 C-2 type, these attacks were to be continued. At the same time there was much doubt as to whether the bombing units should be allotted to armies, or kept under one centralized control. The latter course was adopted early in 1918.

In the spring of 1918 the 1st Night Bombing Squadron was at length ready for the front, and the Briey ironfield was about to be attacked when the great German offensive of March, 1918, was launched. This occasioned a demand for every available machine and so they were despatched to the battlefields. The Briey region escaped.

The German attacks immediately gave rise to a desire at French G.H.Q. to create a powerful air formation. This wish materialised when, on 14th May, 1918, the "Air Division" was created and placed under the orders of General Duval. The Division was organized into two

brigades of two wings each ; the former each comprised one wing of day bombers and one wing of fighters. Later, the night bombers were added to the Division, together with a number of special three-seater fighters designed to protect the day bombers. The total number of aircraft was at first 600, to be increased later to 700. It was strictly a battlefield formation. Any bombing targets which lay more than twelve miles behind the firing line were only to be engaged by air units allotted to armies.

The Division was employed on missions such as the following :—

30th May.—12th Wing dropped 45 tons of bombs ;

In June.—One wing, numbering 112 aircraft, attacked German troops assembling at Lassigny and dropped 30 tons of bombs ;

In July.—Repeatedly attacked the Marne bridges ; on 15th, the 12th Wing, with three squadrons totalling 88 Breguet bombers, and escort of 10 three-seater " RX.1," destroyed two bridges East of Chateau-Thierry ; on the same day the 13th Wing (2 squadrons) carried out two attacks, at 10 a.m. and 6 p.m. ; on 16th, both Wings resumed their attacks ; on 17th, the 13th Wing was actively bombing ; on 18th, the 13th Wing was again engaged, but it was much worried by German fighters and only dropped its bombs from over 16,000 ft. altitude.

In September, the Division was reorganized. In place of the mixed brigades, there were formed : 1 bomber brigade, composed of 2 wings ; 2 wings of fighters. The whole being directly under Air divisional headquarters. Henceforth attacks were carried out by brigades. " Losses began to diminish, while the weight of bombs dropped increased. On some days as great a weight as 65 tons of bombs were thrown." During that month the Air Division supported the American attack on St. Mihiel. On 26th September, the Division was allotted to the French Fourth Army to support the Franco-American offensive. The aerial attack, carried out by both bombing wings, each supported by a fighter squadron, was successful.

In October, the Division joined the (French) Fifth Army. On 27th October it attacked with five squadrons, supported by one squadron of fighters and twenty-three three-seaters (RX.1), or a total of 131 aircraft. Their action is said to have caused the failure of the attack of the 4th Prussian Guard Division. The last attack of the Air Division took place on the 10th November, when the bomber brigade escorted by an entire wing of fighters attacked German troop concentrations in the area Marienburg-Philippeville.

Between 16th May and 10th November, the Air Division is stated to have shot down 637 German aircraft and 125 captive balloons.

# THE BALEARIC ISLANDS AS A BASE FOR OPERATIONS[1]

(*Translated from an article by Captain Pedro Garcia Orcasitas, published in the* Revista de Aeronautica)

THE Balearic Islands, on account of their position, are of great importance from the strategic point of view, and lend themselves more particularly to naval and air operations, especially the latter. The Spanish air bases in the Western Mediterranean are Tetuan, Mar Chica, Mar Meñor—Los Alcazares and San Javier—Barcelona (seaplane and landplane base) and Mahon. The aerodromes are: Herraiz, Nador, Malaga, Motirl, Granada, Almeria, Cieza, Hellin, Albacete, Alicante, Valencia, Castellon and Figueras; and the naval bases: Cartagena and Mahon, of which only the former can undertake major repairs.

Only the Balearic Islands can command practically the whole of the western Mediterranean. At present the only naval and air base is at Mahon, but Mallorca, Minorca, Ibiza, Formentera and Cabrera all possess bays suitable for use by seaplanes, and the two former have good harbours (Mahon, Palma, Pollenza, Alcudia). Mallorca offers good landing facilities for aeroplanes, and an emergency landing ground could be established in Minorca and some of the other islands.

The Sierra de Mallorca, a range of mountains about 3,400 ft. high. and averaging 12 miles in width, runs along the North-West coast of Mallorca. From the meterological point of view, flying conditions are good, as low cloud and strong winds are deflected by this range, which runs at right angles to the prevailing winds. Fog is very rare. The North-West or Mallorca range forms a natural defence for that side of the island; there is only a small port (Soller), which is now being improved by dredging, on this side, and the only means of access to this

[1] A sum of £150,000 has been voted by the Spanish Cortes for dredging the harbour of Port Mahon in order to make it suitable for large ships. The Minister of Public Works, in asking for special authority for this expenditure, referred to the military importance of Minorca and the money spent on defences in the Balearic Islands. These islands, he said, must be made safe against "audacious or rapacious enemy action," and it was hoped that the work would be completed within a year.

There are strong indications that France is seeking a military understanding with Spain, and the importance of the Balearic Islands as a base for covering the passage of French troops from Northern Africa is obvious.—EDITOR.

port, by land, are the road and railway to Palma and the very bad road from Lluch to Pollensa. Communications on the flat part of the country are good. Pollensa is used as an intermediary alighting place on the French Aeropostal air line from Marseilles to Oran.

Mallorca has adequate workshops for the maintenance of flying material. Water is difficult to obtain, a positive forest of windmills being required for pumping. There is, however, an adequate supply, and the island is self-supporting as regards agricultural produce, with the exception of a little wheat, which is imported.

Minorca is windswept, and only possesses the one safe harbour of Mahon for seaplanes, and even this is difficult to navigate. The ground is rocky and uneven, and the only places where it would be feasible to establish emergency landing grounds are near Mercadal and Fornells. Temporary shelter can be obtained at Fornells and in some other bays, but in view of the nearness of Mallorca, these are not of much importance.

These islands are a constant menace to the maritime communications of Great Britain, France and Italy, especially the two latter. On the other hand, they offer very little incentive to air attack, the only points worth striking at being the town of Palma, the naval base at Mahon, and the air base which is to be established in Mallorca. The other aerodromes would hardly be worth attacking, and the Sierra de Mallorca makes defence easy. Ibiza and Formentera are defence outposts against an attack from the South, and Minorca against one from the North. The development of the Air Service has the effect of making Mallorca, rather than Minorca and Mahon, the most important point in the group. Whoever holds Mallorca can dominate Minorca by air, but the defences of the latter would prove a valuable adjunct to the holder of Mallorca, though useless alone. It is however, to be regretted that Mallorca is so poorly provided with defence works.

Attacks on the Balearic Islands can only be made by sea or air. In both cases, night attacks are the more likely, and it is therefore important that searchlight and signals services, etc., should be well developed.

Of the three possible methods of attack by sea—blockade, bombardment and the landing of forces—the first is unlikely to be adopted on account of the natural resources of the islands; the danger of bombardment is not great in view of the superiority of fixed batteries over ships' guns, and of the possibility of defence by air; and the landing of troops, which is always a difficult matter, can be rendered practically impossible by means of aircraft.

In Mallorca, if Inca is taken as the mobile defence centre, the island may most profitably be divided into three sectors, one of which should include Palma and the Sierra de Mallorca, the second Alcudia and Pol-

lensa, and the third the South of the Island, with the town of Campos as its centre. This is the sector which offers the greatest facilities for disembarkation. Ground organization in Mallorca should include a central aerodrome for use as an air base, between Inca and the Sierra, or within the triangle Inca—Sincu—Montuiri—out of range of naval action and difficult to attack by air—and aerodromes or auxiliary landing grounds near Palma, La Puebla, Son Severa and Santany.

All possible alighting areas for seaplanes in the other islands should be noted, and all landing grounds in Minorca, Ibiza and Formentera.

Attacks by air on the islands can only take the form of bombardment. Such attacks may be made either from floating bases or from very distant points—more than 350 km. The distance to be covered is bound to detract a great deal from the effectiveness of the attack. An adequate look-out service, for which all the islands would be utilized, is the first desideratum. Three semi-mobile, anti-aircraft batteries should be provided for each of the three possible objectives—Palma, Mahon and the air base.

At the naval and air bases and at Palma, protection balloons should be provided in order to supplement the action of the artillery and machine guns in certain directions. Care must be taken to maintain communications—submarine cables, etc., between the islands.

The fighter units will constitute the chief air defence of the islands. The organization of the command should be the same as for a district on the mainland which includes a certain stretch of coast. Anti-aircraft and air units must co-operate.

# INFLATION, DEFLATION AND BIMETALLISM

By MAJOR FREDERICK GEIDT, M.C., late R.F.A.

TO most people the words " Inflation " and " Deflation " convey a meaning connected with balloons and motor tyres rather than with high finance. It would, indeed, be possible to find some similarity between the processes of pumping air into a tyre and of pumping increased supplies of currency or credit into a country's monetary system; but an analogy of this kind is often misleading, and in this case might obscure a most important difference. Carelessness and negligence will ruin a motor tyre by its gradual and unheeded deflation, but they will ruin a monetary system by its gradual and unheeded inflation.

Since the War financial problems have become more and more complex, and the time-honoured methods of solution have failed to display their old efficacy. While the experts have been engaged on the development of a new monetary technique, the repercussions of national and international finance on all forms of industrial activity have grown increasingly serious. Their close connection with everyday life was clearly shown by the General Election of October, 1931, which was fought fundamentally on a financial issue. Whatever other considerations were present in the minds of the electors, the great appeal was for national unity at a time of crisis to save the £ and to avoid inflation—and this, paradoxically enough, at a time when the nation was suffering from the effects of extreme deflation. The difficulties which the National Government was called upon to face have as yet been only partially overcome, and one of the problems demanding the most urgent attention is that of our currency, its international value, and whether by some degree of inflation or by other monetary means it is possible to lift the weight of the depression which still presses so heavily on the country.

Inflation means increasing the supply of currency or bank credit which is available for a country's manifold needs. Deflation means reducing this supply. During recent months a new word " Reflation " has been coined; it escapes the stigma attached to " Inflation," and is often used to express that degree of inflation which is necessary to correct the effects of past deflation or to restore the supply of currency and credit to normal requirements. In Great Britain this supply is in

the hands of the Bank of England, which in its capacity of a Central Bank issues notes under the control of the Government and holds the balances of the commercial or joint stock banks. Certain joint stock banks in Scotland and Northern Ireland also have the right to issue notes, but for present purposes this exception may be ignored.

There is an economic law, known as the Quantity Theory of Money, which is based on the simple proposition that if there are in existence one million units of goods and one million units of money, each unit of goods will exchange for one unit of money, and that if the units of money are doubled, each unit of goods will cost two units of money. According to this theory, therefore, if there is an increase in the amount of money, i.e. of either currency or credit, but no increase in the quantity of goods, there will be a tendency for prices to rise. Inflation tends to raise prices and deflation to lower them, and on this law are based the main principles of the science of money in its application to the issue of notes and the control of bank credit.

The issue of notes in Great Britain is governed by a number of Acts including the Currency and Bank Notes Act, 1928, which amalgamated the Currency and Bank of England note issues, although the suspension of the Gold Standard in 1931 has to some extent modified the provisions of those Acts. The Issue Department of the Bank issues notes to the value of the gold held in its vaults, and in addition to an amount laid down by law against the backing of British Government and other securities plus a small quantity of silver coin. That part of the issue which is not backed by gold and is known as the fiduciary issue was fixed in 1928 at £260 millions, but the Bank has power, with the sanction of the Treasury, to decrease it at its discretion or to increase it for a period of not more than two years. Parliament retains the right at any time to alter the laws which it has imposed on the Bank, and all profits from the note issue are paid to the Government. At the present time the fiduciary issue stands at £275 millions, having been increased by £15 millions early in August, 1931. This increase did not strictly amount to inflation because it offset heavy withdrawals of gold from this country, and so obviated the necessity for a contraction in the note issue.

It is easy to understand the temptation which assails a Government when in financial difficulties to have resort to the printing press and, by the simple means of printing more notes against the backing of its own securities, to balance revenue and expenditure. Many countries have been driven to this expedient which, by increasing the amount of money available, has decreased its value, has raised the internal price level, and has rendered impossible of fulfilment any obligations previously undertaken to exchange notes for gold. In Great Britain during the

War the Treasury issued currency notes which were only very partially backed by gold, the fiduciary issue in 1920 amounting to about £320 millions, which indicates the degree of currency inflation which occurred. The best known instance of extreme inflation is that of Germany immediately after the War, when paper marks were printed in such profusion that they became worthless and it became necessary to organize a new currency. Most of the other belligerent Powers at that time embarked on a definite policy of inflation as the easiest means of reconstructing their economic life, with the result that the values of their currencies were enormously reduced.

This was the danger which faced Great Britain in 1931. It was feared that the limit of taxation had been reached and that the political power of the Labour organizations was strong enough to prevent any reduction in the pay of the armed forces, the wages of civil servants and the cost of the various social services on which a large part of the population relies. Had this proved to be the case, the task of balancing the budget would have been impossible, and confidence in the British financial system would have entirely disappeared. Attempts to bridge the gap between revenue and expenditure by floating new loans would have been worse than useless, and the Government would have had no alternative but to resort to the crude method of currency inflation, only to find that as prices rose with the depreciated value of sterling its own expenses would have risen and each succeeding demand for further inflation would have grown harder and harder to resist.

When a country is unable to balance its budget, inflation is not an inevitable result, provided confidence in its finances is maintained and the discrepancy between revenue and expenditure is not too large. If, however, the Government is forced to borrow on an excessive scale, inflation is caused through an extension of bank credit. This type of inflation is more difficult to distinguish, and its study involves consideration of the other functions exercised by a Central Bank.

There are two methods by which the Banking Department of the Bank of England controls the volume of bank credit—by the use of the Bank Rate and by "open market operations." When the Bank Rate is raised, the joint stock banks also raise the rates which they charge on advances, and commercial borrowing is thereby restricted, while a reduction in the Bank Rate naturally has the opposite effect. Open market operations consist in the purchase or sale of securities by the Bank of England and the effectiveness of this measure depends on one of the first principles of banking, that it is never necessary for a bank to keep in hand sufficient cash to repay immediately all the deposits which have been placed with it. The practice in this country is for the joint

stock banks to hold cash equal to about 10 per cent. to 12 per cent. of their deposit liabilities, and this "cash," which is partly in the form of notes and coins in their tills and strong rooms and partly in the form of balances with the Bank of England, does not earn any interest. If the Bank of England purchases securities on the market for £10 millions, it does not actually part with any cash, but the transaction leads to an increase in the balances of the joint stock banks with which the sellers of the securities keep their accounts. In order to earn interest on any funds in excess of the 10 per cent. to 12 per cent. cash reserve against deposit liabilities, the joint stock banks are then prepared to make additional advances to their customers to a total of up to £100 millions, they lower their rates of interest in order to attract borrowers, and "easy money" conditions are established.

The way in which the Government financed the War is an excellent illustration of how credit can be expanded for a purpose which has the support of the whole nation, and the methods then employed have, moreover, a direct bearing on the problems of to-day. The cheques drawn by the Government on the Bank of England for war purposes increased the cash balances of the joint stock banks, which were thereby enabled to make advances of a much larger amount to customers who wished to subscribe for the War Loans. The further expenditure of the Government from the proceeds of these loans again swelled the cash balances of the joint stock banks and, while confidence lasted, this process could have been—and it almost was—repeated *ad infinitum*. It was known that the reckoning must come one day, but at the time the only thing that mattered was to win the War.

The rise in prices which occurred during the War was primarily occasioned by the need for war supplies at whatever cost and by the shortage of other goods, but it had to be supported by a corresponding increase in the supply of money. At the end of the War the whole world was in a state of economic dislocation, and each nation selected its own way of making the necessary adjustments in its financial system. Great Britain, proud of her strict financial integrity upon which so much depended, was willing to undergo great sacrifices in order to keep faith with her creditors, and in 1925 returned to the Gold Standard. In spite of the inflation in both currency and credit which had occurred since 1914, she undertook to exchange her notes for the same quantity of gold as before the War, and sterling became freely interchangeable with other currencies also linked to gold. In order to maintain the Standard, however, it was necessary that production costs in this country should not greatly exceed those in other countries, because when it is possible to buy for the equivalent of 15/- in a foreign country

an article which it costs 20/- to manufacture at home, there is little chance for the British manufacturer or for his workmen. Costs in this country were known to be too high as measured by international standards in spite of the all-round increase which had taken place in world prices, but it was hoped that the methods of deflation practised before the War would still be effective in reducing costs and adjusting our international position.

Deflation by means of a direct reduction in the note issue would probably do more harm than good, because unless the issue were very excessive it would deprive industry of its current needs of cash. Deflation is, therefore, usually effected by a contraction of credit for which either a rise in the Bank Rate or open market operations are used. When the Bank of England raises its Bank Rate and the joint stock banks raise their rates of interest, industry and trade find that financial accommodation is more expensive. In theory the effect of a rise in the Bank Rate is, amongst other things, to induce traders to unload their stocks of commodities at a lower price and manufacturers to reduce their expenses by a reduction in wages or other economies so that costs of production are lowered, the export trade stimulated, imports curtailed and the foreign exchange rates raised. Before the War the international position of Great Britain was so nicely adjusted that changes in the Bank Rate had their theoretical effect, but for a number of reasons, including the rigidity of wages and the cross currents of immense non-economic financial transactions such as the payment of War Debts, the Bank Rate during recent years has proved an ineffective weapon. Great Britain became a good country in which to sell but a bad country from which to buy; our payments on commercial transactions and on account of War Debts exceeded the value of our exports and the various sums owed to us from abroad, so that the high Bank Rate which was intended to protect us merely handicapped industry by the severe contraction of credit and enticed foreigners to lend money on short term to this country. The moment suspicion was aroused as to Great Britain's financial stability, these short-term loans were withdrawn, and the crisis of 1931 developed with extreme rapidity.

The suspension of the Gold Standard has permitted the exchanges to find their own level in accordance with the demand for and supply of sterling for international transactions. Deflation with its attendant evil of the restriction of business activity is no longer necessary to adjust manufacturing costs in this country to world costs, unless other nations engage in cut-throat competition for the devaluation of their own currencies. There are many advocates of a policy of inflation as the best or only cure for the present depression, but to say that we have been

suffering from the effects of prolonged deflation does not necessarily imply that inflation is the proper remedy for the disease of which deflation has been a symptom.

It is one thing to inflate currency or credit but it is quite another thing to control the way in which the increased supplies of money are spent. Hopes may be expressed that the greater purchasing power created will raise prices within the country and so stimulate business activity and reduce unemployment, but this result cannot be ensured. The increased volume of money may circulate within narrow limits and be used mainly for the repayment of debts to the Bank of England itself, or in substitution of one type of loan for another without the creation of any additional assets—a danger which is obviously present when the willingness of the joint stock banks to make advances is being restrained, not by a shortage of cash resources but by a lack of confidence in industry's ability to make profits in the face of political interference and world-wide restrictions on trade. The greater ease with which money can be borrowed may enable concerns already insolvent to postpone the day of reckoning so that good money is merely thrown after bad; it may induce the Government and public authorities under the guise of providing employment to increase their expenditure on unproductive works, and so add to the load of debt which the nation already has to bear; it may find its way into the Stock Exchange, raise the price of investments and start an orgy of speculation; or it may be used for the purchase of food and other goods from abroad, raising their price, but giving little help to the home producer and manufacturer.

The argument is sometimes put forward that effective purchasing power would be greatly increased by the adoption of Bi-metallism, i.e. by basing the currency on both gold and silver. Since 1816, when Great Britain abandoned Bi-metallism and first adopted the Gold Standard, silver coins have been used in this country as token pieces for small change only, and the intrinsic value of the silver in the coins has been of little more importance than the intrinsic value of the paper on which notes are printed, except that too high a silver content would afford temptation to melt the coins down into bullion. Most other nations have followed Great Britain's lead and have abandoned either Bi-metallism or a silver standard in favour of a gold mono-metallic system, one notable deserter of silver since the War being India, and at the present time China and certain Central and South American States are the chief adherents to silver as a basis for their currencies.

Under a bi-metallic system the Bank of England and the Central Banks of other countries which co-operated would buy and sell both silver and gold at a fixed ratio, and silver bullion would then become

convertible into currency. Inflation would, of course, be caused by the expansion of currency, but the advocates of the system argue that this inflation would be automatically controlled by the production of silver, that it would merely offset the present shortage of gold due to the concentration in the United States and France of nearly two-thirds of the world's monetary stocks of that metal, and that gold and silver together would vary less in value than one of them by itself.

This theory, however, appears to be founded on a fallacy. The present maldistribution of gold has not been caused by its insufficiency but by its inability to act as a stable medium of exchange when improperly used for uneconomic payments. Even if the United States were prepared to accept payment of War Debts in silver, the relief would be only temporary, and in due course a shortage of silver would occur unless meanwhile that country reversed its financial and fiscal policy when the main reason for the remonetization of silver would cease to exist. In any case the inadequacy of gold for a purpose to which it should never have been put is hardly convincing evidence of silver's suitability for the same purpose.

Whatever Standard is adopted, the proper function of specie and bullion must be to settle the normal balances on international trading and financial transactions, the export or import of metal being the indication whether the internal position of the country is in proper adjustment with world conditions. Internally there would be little difference between the remonetization of silver and an increase in the fiduciary issue, except that the volume of credit created by the former would be far less easily controlled and might prove extremely dangerous. Externally a great increase could be ensured in the purchasing power of China and other silver-using countries, and our export trade would be correspondingly stimulated, but only by giving silver a greater value in terms of gold or sterling than it has to-day. We should then in effect be presenting our customers with funds wherewith to buy from us, and the wisdom of this course is not readily apparent. Unless the price of silver is raised, the adoption of Bi-metallism must fail to increase the purchasing power of the world.

The greatest disadvantage of Bi-metallism has always been the difficulty of maintaining a double standard of value. During the last half century silver itself has fluctuated very widely in value, and this fact was mainly responsible for the progressive disuse of the metal for monetary purposes, although, it is true, its disuse largely contributed to the steady downward tendency in its value. From 1872 to the outbreak of the War its price fell from about 5/- to 2/- an ounce. A peak price of 7/6 was touched under the exceptional conditions of 1920, but

by 1927-28 the price appeared to be stabilized again at just over 2/-. A further fall occurred, however, and in 1931 a low record of 1/- was reached, silver being rescued from these depths only by Great Britain's suspension of the Gold Standard. Although the sterling price is now nearly 1/6, the gold price is again at the depressed level of the first part of 1931. Future fluctuations in the ratio between gold and silver might perhaps be prevented under a carefully planned and universal bi-metallic system, but it would first be necessary to discover what the permanent ratio should be, and the problem of stabilizing sterling would be made infinitely more complicated if we had to base our currency on two metals instead of on one.

The proper management of the currency is an art requiring much skill and the ability to take long views. Monetary policy cannot by itself cure all our troubles, but it can do something to assist in a revival of business activity. The policy now being followed by our authorities is to let sterling find its own international level, with sufficient control exercised over the exchanges to prevent violent fluctuations due to speculation. This enables the Bank of England to follow a "cheap money" policy with a low Bank Rate, while the surplus funds which always accumulate during a period of depression find their way into the investment market. The first fruits of this policy have been the successful conversion of the 5 per cent. War Loan on a 3½ per cent. basis with a saving of £30 millions a year in the Government's interest bill. The next step will be similar conversions by other borrowers and the issue of new loans to industry at low interest rates. In this way both the Government and industry will benefit from a reduction in expenses, and in time the effects will permeate the whole economic structure of the country. The seeds of recovery sown by the depression itself will be enabled to yield their harvest without the collapse of our financial system which, whatever its shortcomings in the past, is an integral part of civilized society as we know it to-day. Our prosperity, our economic security, the welfare of the nation as a whole, all depend on the proper management of currency and credit. We must look to those in authority to effect such minor degrees of inflation or deflation as may be necessary to enable sterling to function efficiently as a dependable measure of value and a satisfactory medium of exchange. We must strenuously oppose those who claim that an easy short cut to prosperity can be found by substituting financial jugglery for honesty and hard work.

# THE INTERNATIONAL SITUATION

## THE DISARMAMENT CONFERENCE

THE prospects of an international agreement for the reduction of armaments received a severe set-back by the withdrawal of Germany from the Conference until such time as the other Powers shall accept the principle of her " equality of rights." The German claim, set forth in much detail in the *aide-mémoire* handed by the Foreign Minister to the French Ambassador in Berlin on 29th August, pointed out that there is a considerable discrepancy between the disarmament regime foreseen by other countries represented at the Conference and that already imposed on Germany by the Versailles Treaty; and that, so far there is no indication that if such a regime is adopted it, and not the Treaty, shall in future apply to Germany.

In effect, Germany issued an ultimatum to the Conference that either she shall be regarded as an equal, free to adapt her armaments to her requirements on the same principles as may be agreed upon by other nations, or she will hold herself aloof from the Conference, disregard the conditions imposed by the Versailles Treaty, and act as a free agent. The result is that France sees a new threat to her security; for, whether the other Powers disarm to a scale comparable to that which exists in Germany, or the latter re-arms to a scale comparable to that so far contemplated by those Powers, the present huge margin of force possessed by France as compared with Germany would be materially reduced. France will only contemplate such a reduction if she can obtain the most positive and practical guarantees for her security from her other near-by neighbours. It has even been suggested that the more " offensive " weapons, such as tanks, heavy guns and bombing aeroplanes, of all countries might be pooled, and parked in some convenient place on the Continent ready to spring instantly into action against an " aggressor." How such a polyglot force is to be organized and commanded, or what part the tanks, heavy guns, etc., which the " aggressor " nation may have contributed to the pool are to be expected to play when the emergency arises are two difficulties which do not seem to have received much attention. Should there be profound disagreement between the nations as to which of two belligerents is to be regarded as the " aggressor,"

there would be all the materials for an international conflagration in the ensuing conflict which might well occur in and around the " offensive " weapons' park.

Meanwhile, Germany sought to hold " private conversations " with France. The latter, fearing any step which might deprive her of the support of the League—even in conversations—refused. In her reply to the *aide mémoire* of 11th September, she reiterated her earnest desire to promote disarmament all round and accused Germany of obstructing this by threatening to violate the Versailles Treaty. She cannot accept the proposal that the Disarmament Convention shall be substituted *ipso jure* for the Treaty of Versailles.

The British views on this interchange of documents were expressed in a Statement published on 18th September. In this the opinion was expressed that it was " unfortunate that a political controversy of this magnitude should arise at this moment, when it is so necessary that attention and energy should not be diverted from efforts . . . to restore the productive and commercial prosperity of the world " ; and Germany was reminded pointedly of " the concessions so recently granted by her creditors." It was further emphasised that the British Government can " give no countenance or encouragement to the disregard of Treaty obligations," nor could they admit that Germany is legally entitled to the abrogation of Part V of the Treaty of Versailles by any Disarmament Convention to be concluded or by failure to conclude any convention at all. In effect Germany was then adjured to adhere to the Geneva parleys as being the best means for arriving at a friendly agreement between all parties which might result in substantial disarmament combined with a settlement satisfactory to the " national pride and dignity of all concerned."

Unfortunately, the despatch of this document to the French and German governments co-incided with the German official notification to the Bureau of the Disarmament Conference that she had decided not to be represented and would be unable to co-operate with the Conference until the question of "equality of rights" was satisfactorily settled. With a view to finding a way out of what had virtually become an *impasse*, the British Government, on 4th October, suggested a meeting in London between representatives of Britain, France, Germany and Italy for an exchange of views. Italy accepted the invitation at once; Germany intimated that she was prepared to do so. On 13th October, M. Herriot came to London for private conversations with Mr. Ramsay MacDonald. These ended the following day with the announcement that France insisted on Geneva as the meeting place. To this Germany would not consent.

Up to date, therefore, the "Conference about the Conference," as it has been described, has failed to materialise. Efforts are being made to continue deliberations without Germany, but, clearly, she is the keystone of the whole edifice on which the Disarmament Conference will now have to rest, if it is to continue; and if that keystone is removed the whole structure is liable to fall to the ground. The situation has not been made any easier by the French semi-official allegations of extensive evasions of the Versailles Treaty by Germany in the matter of forbidden reserves of arms.

At the end of October, new disarmament proposals were put forward by France, which were due for early discussion at Geneva.

## THE HOOVER PROPOSALS

### CRUISERS

ONE aspect of the Hoover proposals for a reduction of armaments which was not touched upon in the August JOURNAL was that relating to cruisers. The American suggestion as regards this class of warship is that there should be a reduction of 25 per cent. of the total cruiser tonnage of the United States and Great Britain, calculated on the London Treaty tonnage of the latter, i.e., 339,000 tons. But the United States and Britain to have 150,000, and Japan 90,000 tons of 8-inch cruisers.

This limitation would mean that in addition to the fifteen 10,000 ton cruisers, which Britain and the United States might possess, there would be a balance of 189,000 tons for smaller cruisers. On the assumption that the latter displaced 7,000 tons—the size suggested in the British Government's proposals[1]—this would provide for twenty-seven additional ships; making a total of forty-two.

In view of the widely scattered duties of British cruisers, this number would be quite inadequate. As the official declaration puts it, our responsibilities may "call for the presence of ships simultaneously in parts of the world far removed from one another." It is also pointed out that our cruiser strength has been cut down from one hundred and eight before the war to fifty-two, and that hereafter "cruiser numbers will require special consideration."

The present position in regard to Disarmament, and especially the effect of the Hoover proposals and the British comments thereon and counter-proposals, is dealt with lucidly in two articles in the current—October—number of the *Quarterly Review*; one deals with the naval, and the other with the military and air aspects of the subject.

[1] See the JOURNAL for August, 1932, page 632.

## GERMANY AND EQUALITY IN ARMAMENTS

By MAJOR B. T. REYNOLDS, M.C., R.A. (Retd.).

THE recent claim of the present German government in the matter of disarmament might, at first sight, seem to be aimed at equality of armaments with France. It is quite possible that this may be its ultimate purpose, but it is probable that the immediate and most practical object of the Papen Cabinet in putting forward this claim is more directly connected with the situation on the eastern frontiers of Germany than with that obtaining in the West.

Their latest activities indicate that the present government are, first and foremost, realists. They took over the reins of power at a time when the conflicting aims of the various political parties had brought Germany very near to civil war. But the very bitter differences that split the country at that time were all of an internal nature. The Nationalists and the Stahlhelm were in favour of a modification of the Constitution in a conservative sense, and a return to the pre-War system of an executive responsible only to the head of the State, and even to a Monarchy. It is rather difficult to say exactly what the internal programme of the Nazis was, but it seems clear that the general lines on which Hitler would have organised his "Third Reich," if he had ever been given the opportunity of doing so, would have had more in common with Fascism as understood in Italy than with anything else. Hitler's internal aims were quite incompatible with those of the Nationalists and the Junkers. The third great group in German internal politics with whom the Nazis were even more out of sympathy, were the Republicans—a wing of the *Volkspartei*—the Roman Catholic *Zentrum* and the Social Democrats. The organised forces outside the Reichstag supporting this political group consisted of the *Reichsbanner*, the Roman Catholic secular organisations, and the Trades Unions. These were all definitely in favour of the Constitution of Weimar and of a democratic republican form of government. The Communists appeared to be inclined to support this section.

It is fairly certain that, at the time they took over from the Bruening Cabinet, the present government had some working arrangement with the Nazis. It is difficult to say exactly what the terms of this arrangement were, but there now seems little doubt that the Nazi-Nationalist coalition has not worked out in the way that Hitler hoped. The split became apparent very early in the proceedings, and since then the Papen Cabinet, whose strong man is General von Schleicher, has spared no pains to make it quite evident that they have the *Reichswehr* and the *Stahlhelm* behind them. Further, the line that they have taken in foreign politics

since they came into power has gone a long way towards taking the wind out of Hitler's sails. Competent observers predict a big fall in the Nazi poll at the next elections. The driving force behind the Nazi movement was discontent with the state of affairs to which the country had been reduced, and which Hitler's followers attributed in the first place to the Treaty of Versailles. The "Third Reich" was always a rather nebulous conception, the attainment of which was linked up in the Nazi mind with treaty revision and a strong line in external affairs. Here the Nazis were at one with the Nationalists, and even with their most bitter political opponents, the Republican group. In fact, it would not be too much to say that, apart from a few people who are regarded as cranks, there is no important section of opinion in Germany that does not ascribe to the account of the Peace Treaty 90 per cent. of the ills from which their country is suffering. It follows that the Papen Cabinet, in taking the line that they have in foreign policy, have succeeded in uniting the country behind them for the time being. The Germans think that internal differences can wait. The main thing is to escape from the position of inferiority in which the Reich was placed in 1919, as a result of the lost war and the Treaty of Versailles, and to ensure as rapidly as possible her recognition once more as a Great Power.[1]

It is difficult to escape from the conclusion that the present Cabinet are prepared to pursue this aim through thick and thin and that, if its attainment should involve war, they would weigh the chances and possibilities of attaining their end by this means in a purely realist manner, without allowing themselves to be unduly influenced by either the Kellogg Pact or the Covenant of the League of Nations or any other arrangement that they regard as primarily designed to protect the *status quo*. Indeed, they are to some extent the prisoners—probably not very unwilling ones—of their own policy. They have averted the very real danger of civil war and united the country by the line that they have taken in external affairs. This line corresponds with the ardent desires of the German people, and it would probably be very difficult for them to put on the brake now, even if they desired to do so.

In 1925, by the Treaty of Locarno, Germany freely accepted the *status quo* in the West, and the existing frontiers in that part of the world were guaranteed by the Italians and ourselves as well as by the

[1] They have even made some capital out of the previous state of affairs by extending their official blessing to those elements of the various "political" armies that were of some use from the military point of view, and putting their "training" on a regularised basis. There is no doubt that under these conditions the Nazi storm-detachments constitute a valuable auxiliary to the small, but very efficient, *Reichswehr*.

French and Germans. I think public opinion in Germany definitely wrote off Alsace Lorraine at that time, if it had not done so before. It may have had some doubt about Eupen and Malmedy, and it certainly looked to there incorporation of the Saar valley and its coalfields into the Reich, under the plebiscite that is due to take place in 1935. But these were comparatively minor matters, and there was no serious friction in this part of the world to keep the old wound open. But the situation was very different in the East. Here there was a direct conflict between German and Polish national aims.[1] Ever since 1919 Poland has been carrying out a systematic policy of "polonisation" in the Corridor and of peaceful penetration in the Free City of Danzig. The Poles may argue, as they do, that they are merely reversing the policy that Germany had previously pursued in this region since the days of Frederick the Great, if not since the time of the Teutonic Knights, but this only brings out more clearly the essential clash of national aims.

Ever since 1919 the Poles have been determined that they, and no other Power, should control those communications with the sea on which they would have to depend for reinforcements and munitions in the event of war. Before the Great War, the Baltic seaborne trade of what now constitutes the Republic of Poland, went through a variety of ports ranging from Memel on the East to Stettin on the West, and Danzig had no monopoly. Since 1919 the whole of this trade has been concentrated in the strip of land that is called the Corridor, some hundred miles long and varying between fifty and a hundred and fifty miles broad. The port used by this trade was Danzig. The "peacemakers" had shrunk from handing over bodily this predominantly German town to Poland, as was done with the Corridor, and it was turned into a Free City administered by a Commissioner appointed by the League of Nations, and its foreign relations were placed under Polish control. If there had been goodwill on both sides this solution might have worked, and it would obviously have been of very material benefit to the Danzigers whose port was placed in a position where it was bound to assume a far greater importance than it enjoyed in pre-War days. But it was just this goodwill that was lacking. It is impossible to impute the whole of the blame to either side, but the fact remains that from 1919 up to date, there has reigned in Danzig a continuous state of petty warfare between Danzigers and Poles. The Danzigers have done everything possible to annoy the Poles, and the Poles have tried to carry out a policy of peaceful penetration in the Free City. One more than

[1] The situation has been described in the JOURNAL of August, 1929, by Major Polson Newman in an article entitled "The Polish Corridor as it is," and also in an article called "A Danger Spot to Europe," by "Inquisidor," which appeared in the May, 1929, number.

ordinarily annoying incident that might have had serious results was the refusal, in 1920, by the Danzig authorities to allow a shipload of Polish munitions to be landed in the port. The Danzigers based their action on the terms of the Peace Treaty which laid down that the port should not be used for any military purposes whatsoever. But the Polish army before Warsaw was hard pressed by the Bolsheviks at the time, and the munitions were sorely needed. The ship was finally unloaded by British troops under the orders of the High Commissioner who was an Englishman, and the munitions arrived in time. But it is obvious that an incident of this kind was well calculated to give the Poles furiously to think. The result of their thinking was that they set about building a new port of their own on Polish territory, on the western side of the Bay of Danzig, on the site of the fishing village of Gdynia, which they subsequently joined up to Polish Upper Silesia by a new line of railway. The port of Gdynia and the railway were financed by foreign capital, principally French. The present situation is that the figures of loadings and unloadings for the new port have now risen above those for Danzig, and there is not the slightest doubt that the disparity will increase at the expense of the older port. It is quite possible that, in normal times, there might be enough traffic for both ports, but times are not normal, and the Danzigers are very perturbed about the situation. It goes without saying that they find in Berlin a sympathetic ear into which they can pour out their troubles, and that they can also count on financial assistance from the Reich in their fight against Polish peaceful penetration.

But the Germans are far more exercised in their minds about the Corridor than they are about the woes of the Danzigers. The solution of the larger problem would automatically involve that of the smaller. The Polish Corridor cuts off East Prussia from the rest of the Reich. East Prussia has a great importance, material as well as sentimental, for the class that is at the head of affairs in Germany to-day—the Junkers. In spite of arrangements that have been made for through transit by rail, East and West across the Corridor, and which are working more or less satisfactorily, the situation is obviously one that is liable to cause friction. It is very unlikely that the problem will be solved by any of the ingenious proposals that have been put forward in certain quarters for German bridges and Polish tunnels, and *vice versa*. There is a genuine, deep seated, cause for anxiety on the German side if the present state of affairs continues. The majority of the agricultural labourers on the great estates of East Prussia are Poles and Roman Catholics, whilst the landlords are Prussians and Protestants. In the frontier districts, many of the labourers actually have their homes on Polish soil and cross the border to go to their work. In view of the present state

of depression of German agriculture there is an obvious field here for peaceful penetration. One of the projects of the present German Government for dealing with unemployment is to settle on the land in East Prussia those for whom no work can be found in industry. It remains to be seen how this will aggravate the situation.

The psychological effect on the German mind of the existence of the Corridor should not be lost sight of. Here is a band of another colour on the map, separating the little bit of blue that is East Prussia from the larger area of blue that represents the remainder of the Reich. German national feeling resents the existence of the Corridor as, perhaps, the most obvious of the outward and visible signs of German defeat and the Treaty of Versailles. A band of colour on a map is one of the simplest, and at the same time one of the most effective, agents of propaganda. It can be, and no doubt is, impressed on the imagination of every school child in the country.

Another complication was introduced into German-Polish relations by the results of the plebiscite in Upper Silesia in 1921, as a consequence of which the greater part of the coal, iron, and zinc ore of that area were handed over to Poland. The situation in this part of the world is that the population of most of the towns is predominantly German, whereas the inhabitants of the countryside are almost entirely Poles. The decision of the League of Nations that followed on the plebiscite gave certain towns with their German majority to the countryside that contained them. The Germans maintained that this was inequitable, and they appealed to the League for a revision of the settlement, but without effect. Whatever the rights and wrongs of the question may have been the results of the plebiscite were complicated by the action of terrorist bands on both sides, and consequently what was formerly a single and very complicated industrial area, built up by German capital and German brains, which contained a network of communications of all kinds, was arbitrarily divided by a political frontier along which a customs wall sprang up, thus completely dislocating all the existing arteries of trade and intercourse.

These three questions of Danzig, the Corridor and Upper Silesia have given rise to constant friction between Germany and Poland, and the cumulative effect has been such that German-Polish relations to-day are about as bad as they could be, and there are signs that the tension is increasing. Last summer the report of a projected Polish *coup de main* on Danzig found its way into the British press. The report may have been true, or it may not, but nobody in that part of the world has forgotten how, during the course of the Russo-Polish war in 1920, the

Poles seized Vilna from the Lithuanians and that they have failed to give it up since.[1]

It is the recollection of this incident that lends some colour to the German claim that, in the state of military unpreparedness to which she has been reduced by the Treaty of Versailles, she constitutes an " armament vacuum " in the midst of an armed Europe. Every German schoolboy knows that nature abhors a vacuum, and the inference is obvious to his mind. The lesson that Berlin is a " frontier " town open to a sudden raid from the East was well brought out this year in the German manœuvres, over which Field Marshal von Hindenburg presided personally. It appears probable, if not certain, that there is some kind of military convention between Germany and Russia. In any case, it is no secret that German officers, whilst officially on leave, have been attending courses in Russia in the various arms and weapons which are forbidden to their country under the Treaty of Versailles.

Germany is not the only country that is interested in Treaty revision in this part of the world. Poland contains a large minority of Ukrainians whose parent state forms part of the U.S.S.R. It is unlikely that Russia will consent for ever to the provision of the Peace Treaty that cuts her off from the Baltic and the port of Riga, her earliest acquisition in her century-old search for sea harbours. It is difficult to believe that Soviet Russia would embark on a military adventure for the " beaux yeux " of Germany or, for that matter, of any other capitalist state; but one can very well imagine that an explosion in Eastern Europe would be difficult to localise, and that it might bring considerably nearer to realization the Soviet dream of a world revolution.

Italy has lent her diplomatic support to the German claim for armament equality. Germany, Soviet Russia, and Italy, with their widely different systems of government and ideals, appear at first sight to be strange confederates. The common bond between them is the desire for a modification of the *status quo*. The point where the shoe is pinching most is on the eastern frontiers of Germany. It is the situation here that has given rise to the German claim for equality in armaments, and the position in this part of the world is so delicate that a spark might touch it off.

[1] Since 1920 there have been literally no relations at all between Poland and Lithuania. Relations between the two countries are not merely bad, they are non-existent. As a result the port of Memel is practically idle.

## THE FAR EASTERN SITUATION

THE general situation at Shanghai has gradually resumed a normal aspect although many problems of reconstruction remain to be faced. On 13th June the " state of emergency " was declared to be over, and foreign troops ,with all other guards, were withdrawn from the perimeter defences to their nominal quarters. Subsequently these defences were all dismantled.

Since then, however, the situation is said to have grown more strained as the outcome of the rather more intense anti-Japanese boycott by the Chinese, and the Japanese naval contingent on shore has actually been increased.

Apart from the events that took place in Shanghai, the general situation in China remains obscure. Chiang Kai-shek, who now appears to be aiming at a military dictatorship to be maintained by his own troops, is clearly alienating the Kuomintang political party who profess to favour a purely civil form of government. Intrigues and uncertainty are the order of the day.

At the end of July a clash occurred between Japanese and Chinese troops near Chaoyang in eastern Jehol, which although not of any very great importance sufficed to precipitate a crisis at Nanking. Wang Ching-wei, Chief of the Executive Bureau in the Central Government—a post equivalent to that of Prime Minister, resigned as a protest against the military inactivity of Marshal Chang Hsueh-liang, the former ruler of Manchuria, who has since assumed control over the north-eastern province of China proper. Chang repudiated the accusations made against him, and as a political gesture also resigned from his official appointments. But he still remains in Peking and appears to retain effective control over some 200,000 men. Other resignations amongst members of the central government are reported.

The Communist-bandit menace has not grown less in the middle Yangtse Valley. Although Chiang Kai-shek's recent campaign eased the threat to the railways between Tientsin-Nanking and Peking-Hankow, there is no improvement in the situation, except in Fukien Province; in Huteh and Kiangsi Provinces the " Reds " have if anything extended their hold on the countryside.

### THE SITUATION IN MANCHURIA

The Japanese are continuing with vigour their campaign for the pacification of Manchuria; their task, however, is proving extremely arduous. The nature of the country, the guerilla tactics of the Chinese irregular forces, and the lack of any real support by Manchukuo troops are tending to increase their difficulties. During July, hostilities con-

tinued principally in the region of, and to the North of, the eastern section of the Chinese Eastern Railway. At the end of the month, however, fighting occurred between Japanese troops and Chinese forces near Chaoyang (160 miles West of Mukden) in the province of Jehol,[1] when a Japanese expedition, sent from South-West Manchuria to effect the release of a Japanese official of the Manchukuo *régime*, clashed with the provincial troops.

At present there is no evidence that the Japanese have advanced further into Jehol, but it is not improbable that they will enforce the claim that this province is an integral portion of Manchuria. That contention is perhaps strengthened by the fact that Jehol lies to the North of the Great Wall, and so is not part of China proper. But it is a difficult mountainous country, and any Japanese forces moving into the province might meet with strenuous opposition. As it is, the Japanese have implied that any Chinese intervention in Jehol must lead to their strengthening their garrison in the Tientsin area. Such a move would naturally threaten the communications of any Chinese forces moving northwards into Jehol.

Throughout the summer spasmodic fighting continued in Manchuria between Japanese and Manchukuo troops on the one hand and bandits and irregular anti-Manchukuo forces on the other. In North Manchuria, the Japanese claimed further successes against insurgent forces. In the Harbin area floods recently restricted military operations and resulted in an influx of several thousand refugees. In South Manchuria, at the beginning of August, raids were carried out by insurgents against Yingkow (Newchang) and neighbouring stations on the South Manchurian Railway. The railway was damaged and a Japanese flotilla of destroyers was despatched to Yingkow to land naval detachments.

It may be assumed that the Japanese will not tolerate a repetition of such episodes. There is thus reason to believe that this last-named incident, combined with the situation in Jehol, may prompt them to despatch more troops to Manchuria.

Another thorny problem in Manchuria is the future control of the Chinese customs administration. It appears that some *modus vivendi*

[1] Jehol is a comparatively newly-created province; its territory being formerly part of eastern Inner Mongolia and of Northern Chihli. The Manchukuo Government, when proclaiming the independence of Manchuria, included Jehol as its territory, as being one of the four provinces of Manchuria. But the actual boundaries of Manchukuo have never been clearly defined. Tang Yu-liu, the Governor of Jehol, is an able administrator who obtains his revenue chiefly from the production of opium. This necessitates his maintaining relations with Marshal Chang Hsueh-liang at Peking.

may be arranged whereby sufficient funds will be remitted to Nanking to meet the service of the foreign loans secured on the customs, whilst the Manchukuo Government will retain the remainder of the customs revenue for its own use; such an arrangement would maintain the integrity of the customs administration. Customs funds have, however, been seized by Manchukuo authorities at Newchwang, Antung and Lungchingtsun, whilst the customs buildings at Harbin are under restraint. The Manchukuo Government has also interfered with the customs administration at Dairen, in Japanese Leased Territory, and this has caused some embarrassment to Japan.

### THE FUTURE OF MANCHURIA

The Report of the League of Nations Commission on Manchuria, presided over by Lord Lytton, was signed on 4th September; the conclusions are unanimous. It has been published, and is to be considered by the League of Nations during November. Further criticism is best reserved for the moment.

In anticipation of the publication of the Report, the Japanese Government proclaimed their recognition of the new State of Manchukuo, and on 25th August Count Uchida, Minister for Foreign Affairs, made an important speech in the Diet, reiterating the conviction of his Government that in the recognition of the new State lay the only hope of stabilizing a condition of permanent peace in the Far East.

Simultaneously a Treaty between Japan and Manchukuo was being negotiated to lay down the broad principles on which the future relations of the two States should be based. The three main points were:—

(*a*) The declaration by Manchukuo to recognise all existing obligations;

(*b*) The new State is the expression of the desire of the Manchurian people to obtain national independence;

(*c*) The defence of the new State to be the common object of Manchukuo and Japan.

## THE TRAFFIC IN ARMS

By James Clifford.

I ONCE saw an unhappy Chinese sailor hauled off with much pomp and ceremony to the Ward Road prison in Shanghai by a proud escort of police and Chinese customs' officers. Later he was taken before the International Mixed Court, told what an awful thing it was to smuggle arms, and given a stiff sentence in the unhealthy Shanghai jail. His offence was the possession of two ancient revolvers, which he

had intended presenting to his friends in the armed robbery business in the International Settlement. While the poor coolie toiled in prison, ships left every port in Europe carrying oranges, eggs, timber, meat and all sorts of other things to China. Sandwiched into the mixed cargoes were some hundreds of thousands of dollars' worth of rifles, revolvers, machine guns and ammunition, which were in due course landed at various Treaty ports, or dumped ashore at some pre-arranged coastal rendezvous in China. The commanders of these ships were bluff, good fellows—I knew several—and they never visited a Shanghai prison. Neither did the fat continentals who supplied the weapons in defiance of international law.

The recent warfare between Japan and China came as a godsend to armament manufacturers all over Europe, including England. In Britain, however, manufacturers gave a definite assurance to H.M. Government that under no circumstances would they supply armament to any but the recognised Chinese National Government, and this pledge has been loyally observed. Such a restriction has proved hard on our manufacturers for, ever since the recognition of Chiang Kai-shek's Government, British gunsmiths and others interested in the trade have lost large sums of money, which have gone to other countries for ammunition supplied to the opposing Chinese forces. The international restrictions, obviously, could have no effect unless they were also adhered to by other supplying countries. In practice, all that our enactments have meant has been that Britain has lost a share in a profitable industry.

In the small arms field—rifles, revolvers, machine guns and light artillery—Britain is recognised as the best manufacturer. This is proved by the large orders from many countries for weapons of this kind made in Britain. Yet such has been the respect for the law that Britain has supplied to China a very small percentage of her total imports of armaments. In 1925 Great Britain supplied weapons to the value of a little over £9,000, this being only 1.3 per cent. of the total imported that year. The percentage varied slightly until 1930, when China, in the grip of serious civil strife and with fear of Japan already predominant in the minds of her leaders, increased her arms imports considerably. The percentage then rose to 3.7, the highest recorded in recent years. To this must be added 7 per cent., roughly corresponding to £100,000 worth of material supplied from the British Colony of Hongkong.

A vast supply of small arms was, however, obtained from non-British sources by the warring generals who were opposing the National Government in China. They paid big money and they received poor guns, but they were guns, and that was all that mattered. A favourite trick

of some merchants was to supply the guns and then charge exorbitant prices for ammunition. But this did not seriously matter; it only meant that a couple more towns had to be looted to provide payment.

Germany is well ahead in the records kept by the League of Nations of supplies of armaments to China. In 1925 she sent three million dollars' worth of arms—52.9 per cent. of the total imports that year. Yet in 1930, when the Chinese realised the importance of effective as distinct from ornamental weapons, her total fell to 25.7 per cent. The total of China's armament imports in that year reached the huge figure of fifteen million Shanghai taels, which at the current rate of exchange was one and a half million sterling. It is fair to assume that of this total only a small percentage was delivered to the National Government, and this is borne out by the fact that frequent seizures by that Government in the past three years have totalled thirty-nine million dollars.

Japan, too, apparently believes in British weapons when strife threatens, for although in 1925 she purchased 84.7 per cent. of her war materials from Germany and only 2.6 per cent. from Great Britain, in 1930 she bought 22.7 per cent. from Britain and 48.1 per cent. from Germany. Strangely enough, all the countries which buy only a small percentage of arms from Great Britain buy considerably larger quantities of ammunition. Japan bought 27.7 per cent. of her imported ammunition from Britain in 1925, and 36 per cent. in 1930. Compared to China, however, Japan imports only a small proportion of her armament. The total for 1930 was a little over one million yen (£100,000), and the highest figure reached in 1925 was one and a half million yen (£150,000).

Great Britain is well ahead in the exportation of actual arms, but this is balanced by the fact that she supplies practically the whole of the Empire. An enormous annual total is sent to India, for the use of the large military and police establishments in that country, while British forces stationed in our colonies throughout the world find their weapons included in the annual export totals from Great Britain. In addition, field forces maintained by the Dominions draw their equipment from this country.

Brazil appears to be the largest national importer of armament during the last five years. The latest figures show that within the last two years her imports have dropped considerably, but prior to 1927 she was importing from one and a half to two million dollars' worth annually, and in 1925 she imported 18.8 per cent. of the world's total. Over the same period, however, the Brazilian Government imported an average of only 0.5 per cent. of the total of imported ammunition, proving that she believes in making her own powder even if she buys her guns from abroad.

# CORRESPONDENCE

## THE WEAPON OF THE WEAK

To the Editor of the R.U.S.I. Journal.

Sir,—In his recent article on "The Weapon of the Weak," Admiral Sir Herbert Richmond has, I suggest, omitted one aspect of the argument. Referring to France, he says: "It is not surprising, therefore, that she turned to submarines, for the same expenditure would give her greater value (than 5 battleships)." This, to my mind, is a statement which leads the way to the real reason why the submarine is called the "weapon of the weak."

The battleship—and by battleship I mean the largest type of warship afloat at any moment—will always be the backbone of large navies. No maritime Power can hope to be even reasonably secure without such warships. Battleships need cruisers and destroyers together with all the numerous small craft of a modern navy to do their scouting, screening and mine sweeping. Again, destroyers cannot operate alone; they need cruisers to support them, who, in their turn, need battleships.

Consider, then, a "weak" Power—weak financially and weak in man-power. She cannot build battleships; therefore, from the above argument it is a waste of time her building *any* ships of war, unless she can find a type which is a unit in itself and can work unsupported. It is the submarine which supplies her requirements, for it is the only ship which can work unsupported, and for this reason and this alone the term "weapon of the weak" so aptly describes this class of warship. The German submarine warfare bears out this idea. The German fleet was in a weak position and the only type of ship it could usefully employ was the submarine.

This does not imply that the submarine is essential for the weak Power, for, as Admiral Richmond argues, that is absurd. Diplomacy is her only real defence, together with an unerring judgment when war is being waged to come in on the side which is going to win.

H.M.S. "Decoy,"
*20th September*, 1932.

E. W. Monckton,
*Lieutenant, R.N.*

## ENTERPRISE IN NAVAL TACTICS

To the Editor of the R.U.S.I. Journal.

Sir,—Lieutenant-Commander Prentice's article "Enterprise in Naval Tactics" and your brief footnote thereon[1] in the August number will be an encouragement to all who may fear, as I confess I have feared, that the science of Fleet Tactics had disappeared for ever into the belief—which has grown up in this century only—that

[1] The Editorial note referred to remarked that "the difficulties and dangers of altering course sixteen points (180°) together in a modern fleet are often much exaggerated. This manœuvre, it will be recalled, was performed successfully by the German High Sea Fleet at Jutland. It is mainly a question of drill."

"single line ahead and turning in succession" is the only method by which a fleet can be handled when cruising or when in action. It is a belief which seized so strong a hold upon the British Navy during the War that for nearly all fleet purposes, the properties of two out of the three turning pendants fell so out of knowledge, that they seemed to be regarded as a danger. What is more striking still, they went out of mind to such an extent that the German movement of turning together at Jutland has come to be regarded as a new manœuvre!

It may, therefore, be of some interest to recall the fact that from the first introduction of "steam tactics" the practice of "turning together" was the foundation of them. This, it may be suggested, proceeded from a similar practice under sail. Did not both Nelson and Rodney use the principle of the "turn together?"

Admiral Sir William Martin, to whom we owe the Mooring Board, was one of the first to develop "steam tactics." He was followed by Admiral The Hon. Sir James Drummond in the Mediterranean; but it is to Sir Geoffrey Phipps-Hornby that the Navy owes its greatest debt in this matter of fleet handling. He was largely responsible for systems of "forming and disposing" and "equal speed manœuvres"; the latter being entirely devised upon the turn-together principle. To deny the usefulness of this principle seems tantamount to a denial of the additional manœuvring power given to us by machine motive power.

From Sir Geoffrey Phipps Hornby onwards, the science of fleet handling and the editing of the signal books was the peculiar care of the Board of Admiralty and of the Flag Officers afloat. The signal books, up to the first few years of this century, received the personal signature of each Lord of the Admiralty, and no change was ever made in them without having received each Naval Lord's imprimatur, nor without having been first thoroughly tested in the sea-going fleets.

In those days the virtue of turning together was fully recognised, and far from the German manœuvre at Jutland being the first instance of a fleet being turned together, this was a common practice in the British fleets of the xixth and early xxth centuries, both by day and by night. Moreover, during annual manœuvres it not infrequently happened that fleets of fifty to sixty vessels were so turned. So much was this the case that up to the early 1890's, when the turning pendants supplanted them entirely, there were two single flag signals in the Signal Books which were in constant use:—

M flag: Turn together 16 points to Starboard.
N flag: Turn together 16 points to Port.

To confine manœuvring in action to the alter course in succession principle is to go very near to reducing the fleet to the defensive, since combined and continuous offensive action by a fleet bound by such a restriction would be much hampered. And to confine a "cruising" or an "approaching action" fleet to such a system is to make its changing movements unnecessarily hazardous.

When turning together, with the vessels addressed using the same helm and the same speed, as they are bound to do, and turning to the same point of the compass, collision is impossible; whereas when each ship turns independently as she does when turning in succession, she is subject to the varying conditions of the state of the line, to the turn of the ship ahead of her, to the position of her next astern and to the variations of speed caused by the station-keeping alterations of every ship ahead of her. When the line is a long one, these become very marked and the difficulties are increased for every ship down the line.

In the last fifty years there have been several collisions between battleships, but in each case, I believe it is correct to state, these occurred when individual movements were taking place. The loss of the "Victoria" in the Mediterranean

in 1893 and the ramming and narrow escape from a similar fate of the "Prince George" at night off Finisterre in 1903, both took place when the ships were turning in succession and uncertainty had been created in the mind of each captain as to what his neighbour would do under the circumstances.

For a minor but clear-cut example of the effect in action of this, at the time, all-compelling theory that you "must turn in succession," there is the story of the 5th Battle Squadron at Jutland to study.

D. R. L. NICHOLSON,
*Admiral.*

*20th September*, 1932.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—The case for "Enterprise in Naval Tactics" is one which must receive great consideration, but are the historical instances cited by Lieutenant-Commander Prentice in his article in the August number fair analogies at the present time?

While it is true that in the battles he mentions the old rules were departed from, the ship-for-ship fighting superiority was generally such that the rules could safely be neglected. With more or less equal material, and the advantage in leadership, personnel, and seamanship that we possessed, any tactics which brought on close action and prevented the enemy's escape would probably have achieved victory. The weapons of the period took considerable time to be really effective, owing to the nature of the projectile and the comparatively slow rate of fire, and this made accepting a temporary disadvantage during the approach quite permissible. It was the vigour of the offensive and not the novelty of its form which was the major decisive factor in these battles, with the exception of the Nile.

The infinitely more rapid and effective arms of the present day and the increased importance of the machine would seem to make this much more hazardous. Weapon technique is now a great part of tactics. Tactical enterprise must be of a nature to exploit or obtain a superiority in this direction if the enterprise is not to be sterile or even fatal.

"PISCIS."

First Destroyer Flotilla,
*20th September*, 1932.

## REGIMENTAL MUSEUMS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Colonel Cowper's article on Regimental Museums in the August number deals with a subject in which I have been keenly interest for many years.

The following details, not mentioned in the article, appear to me to be of importance:—

(1) Colonel Cowper rightly says that in most cases Museums will be housed in the Regimental Depot concerned, but he makes no allusion to the importance of having arrangements made for the disposal and custody of the exhibits in the event of mobilization, or in the event of the accommodation allotted to the Museum being required for other purposes.

(2) In the event of the collection being housed in a local Museum it is important that it should be publicly and clearly recorded that the articles are the property of the Regiment and are on loan.

(3) He states that replicas should not be accepted. Surely if the Museum is to be of educational value it is better to have a copy than no representation at all, not to mention the fact that, in certain cases, the display of a replica is known to have caused the gift of the original.

(4) No mention is made of the importance of insurance. The insurance of a Museum is always a difficult question, as many articles are of purely sentimental value. Yet it must be remembered that, if a Museum were destroyed, the insurance money would contribute to its reformation and new cases, etc.

(5) That care should be taken not to place articles, which might deteriorate from light, such as documents, uniforms, flags, etc., in a window case or exposed position.

(6) The appointment of a good curator is essential. The employment of some ex-N.C.O. or private soldier to keep the rooms clean is not sufficient.

(7) Over-cleaning of weapons, badges, buttons, etc., should be guarded against; enthusiastic cleaners have been known not only to remove all lacquering but even designs as well.

(8) Continuity in supervision should be aimed at. A good curator will tell at a glance whether articles are missing and it thus becomes unnecessary for him to check the museum regularly in detail.

H. G. PARKYN,
*Major.*

*20th September, 1932.*

## BULLET AND BAYONET

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In his article, "The Problem of the Light Automatic Gun," which appeared in the last number of the JOURNAL, Captain Gamble has shown the disadvantages of the Lewis gun in regard to mechanism and tactical handling. To overcome these he suggests reorganization. It would appear, however, that in modern war, whether it be on a large or small scale, the necessity for the combination of maximum power of assault with maximum fire power is of much greater importance than the author has implied.

Let us examine the requirements of the platoon in this respect.

*Bayonets.*—The bedrock of our training for the defence is that there should be no retirement. We intend to hold our positions at all costs, even to the extent of repelling an assault with the bayonet. There is no reason to suppose that our enemies in a future war will not be trained in the same way. Therefore we must have bayonet both in attack and defence. Especially will this be the case in semi-civilized or uncivilized warfare. As the author has pointed out, the number of bayonets available to-day is almost ludicrous.

*Bullets.*—We learnt, during the War, that the fire power of our platoons was insufficient, and we increased it by the adoption of the Lewis gun. In passing, it may be mentioned that this weapon was at the time the only one which could be put rapidly into production. It was essentially a stop-gap and not a very good one at that. Experience has shown us that this fire-power cannot be reduced. The question is whether the Lewis gun or any light automatic provides the best method of producing it. Sooner or later this problem will have to be faced. It will be very short-sighted when the time comes to be content to "make the best of a bad job."

The presence of two light automatic sections in the platoon at once introduces two distinct types of tactics within this unit, with the consequent difficulties of handling and control. Half the platoon contains more than two-thirds of the fire-power, whilst only half the unit is available for assault or patrol. In addition,

it is considered that any light automatic organization involves such close grouping as to be wasteful of ammunition against most service targets, in addition to being shoulder-controlled, inaccurate by night, in fog or smoke.

To the writer it seems that the only solution is to be found in the automatic rifle which is now actually in production. This weapon weighs only a few ounces more than the service rifle. Armed with this weapon every man becomes a "useful bayonet." The four sections of the platoon become homogeneous and every man can, with normal training, produce 25 rounds per minute. Therefore, if we allow five men to each section, we have a platoon which contains 20 bayonets besides the four section leaders; this section can at the same time produce 500 rounds per minute. This is 20 rounds per minute more than the modern platoon produces at 15 rounds per rifle and 150 rounds per Lewis gun; that is considering only rapid fire in both cases.

*Ammunition Supply.*—It has been suggested that it would be impossible to supply a platoon armed with automatic rifles with sufficient ammunition. It is not considered that this difficulty will be found insuperable. The first essential is, of course, first rate fire discipline. At present every rifleman carries 70 rounds, i.e., sufficient for say 4½ minutes rapid fire. It we take this as the standard, men armed with the automatic rifle will require 115 rounds each. Presumably they would carry 70 rounds as before, leaving 45 rounds per man still to be carried. But we have only counted five men in each section. It is suggested that No. 6 in each section should be armed with a revolver and carry 215 rounds. In point of fact, if packed in suitable boxes, there is no reason why he should not carry more. Before going into action, as is now the case, each rifleman and carrier would be issued with a further bandolier.

*September*, 1932.

F. JEBENS, *Captain*.
The Prince of Wales's Volunteers.

## THE INDIAN ARMY

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In the JOURNAL for August, 1931, there appeared an article by Colonel E. B. Maunsell, on the "Foundations of the Indian Army," as excellent as it was impartial. May I, however, point out one error? Colonel Maunsell says that the old Madras Army included in its ranks a large number of Pandy sepoys by race. This is not correct, as the Madras Army was always almost entirely recruited in Southern India. It is true that the native artillery had in its ranks a fairly large proportion of Rajputs, but the muster rolls of the 52 infantry regiments show very few up-country men—the proportion seldom exceeding 2 per cent—while the cavalry consisted almost entirely of South Indian Mussalmans. *Pace* those who are always seeking to decry the Madras sepoy, Madras can still provide excellent fighting material, as the War showed, provided it is carefully selected; and it should not be forgotten that Madras found over 51,000 combatant recruits between August, 1914 and November, 1918, a total placing her third on the list for all India.

MYSORE,
*26th July*, 1932.

E. G. PHYTHIAN-ADAMS, *Major*,
I.A. (retired).

# NAVY NOTES

## GREAT BRITAIN

### The Flag List.

Admiral Sir Michael H. Hodges, K.C.B., C.M.G., M.V.O., was placed on the retired list at his own request, in order to facilitate the promotion of younger officers, to date 23rd September. From the same date, Vice-Admiral Bertram S. Thesiger, C.B., C.M.G., was promoted to Admiral. Rear-Admiral Berwick Curtis, C.B., C.M.G., D.S.O., was promoted to Vice-Admiral, 23rd September, and placed on the retired list, under Order in Council of 9th March, 1914, to date 24th September. Captain Noel F. Laurence, D.S.O., A.D.C., was promoted to Rear-Admiral, 23rd September, and reappointed to the Imperial Defence Course, on promotion. Rear-Admiral the Hon. Reginald A. R. Plunkett-Ernle-Erle-Drax, C.B., D.S.O., was promoted to Vice-Admiral, 24th September, and reappointed as Commander-in-Chief, America and West Indies Station, on promotion. Captain Andrew B. Cunningham, D.S.O., was promoted to Rear-Admiral, 24th September.

Admiral the Hon. Sir Hubert Brand, K.C.B., K.C.M.G., K.C.V.O., was placed on the retired list at his own request, in order to facilitate the promotion of younger officers, to date 12th October. From the same date, Vice-Admiral Sir Vernon Haggard, K.C.B., C.M.G., was promoted to Admiral, and was placed on the retired list, at his own request, in order to facilitate the promotion of younger officers, to date 13th October. Rear-Admiral M. E. Dunbar-Nasmith, V.C., C.B., was promoted to Vice-Admiral, 12th October, and reappointed Commander-in-Chief, East Indies, on promotion. Captain C. A. Robertson-Scott, A.D.C., was promoted to Rear-Admiral, 12th October, and placed on the retired list, 13th October. Vice-Admiral P. H. Hall Thompson, C.B., C.M.G., was promoted to Admiral, 13th October. Rear-Admiral the Hon. Matthew R. Best, C.B., D.S.O., M.V.O., was promoted to Vice-Admiral, 13th October, and reappointed Admiral-Superintendent, Malta. Captains A. H. Walker, O.B.E., A.D.C., and H. G. Thursfield, A.D.C., were promoted to Rear-Admirals, 13th October, and placed on the retired list, 14th October. Captains B. W. Barrow, D.S.O., A.D.C., and I. W. Gibson, O.B.E., M.V.O., A.D.C., were promoted to Rear-Admirals, 14th October, and placed on the retired list, 15th October. Captains L. S. Holbrook, M.V.O., A.D.C., and H. E. Dannreuther, D.S.O., A.D.C., were promoted to Rear-Admirals, 15th October, and placed on the retired list, 16th October. Captains A. T. Tillard, D.S.O., A.D.C., and J. C. Hodgson, D.S.O., were promoted to Rear-Admirals, 16th October, and placed on the retired list, 17th October. Captain Max K. Horton, D.S.O., was promoted to Rear-Admiral, 17th October. Captain J. C. Hamilton, was promoted to Rear-Admiral, 17th October, and placed on the retired list, 18th October. Captain E. C. Boyle, V.C., was promoted to Rear-Admiral, 18th October, and placed on the retired list, 19th October. Captain R. M. Bellairs, C.B., C.M.G., was promoted to Rear-Admiral, 19th October, and placed on the retired list, 20th October. Captain J. M. Pipon, C.M.G., M.V.O., O.B.E., was promoted to Rear-Admiral, 20th October.

Admiral the Hon. Sir Hubert Brand was promoted to be an Ordinary Member of the Military Division of the First Class, or Knight Grand Cross, of the Order of the Bath, to date 12th October, in recognition of long and distinguished services in his Majesty's Navy.

Admiral Percival H. Hall Thompson, C.B., C.M.G., was placed on the retired list, at his own request, in order to facilitate the promotion of younger officers, to date 1st November. From this date, Vice-Admiral Sir William H. D. Boyle, K.C.B., was promoted to Admiral; Rear-Admiral Humphrey T. Walwyn, C.B., D.S.O. (supernumerary while lent to the Government of India as Flag Officer Commanding and Director, Royal Indian Marine) to Vice-Admiral; Rear-Admiral Edward R. G. R. Evans, C.B., D.S.O., to Vice-Admiral; and Captain Colin A. M. Sarel, O.B.E., A.D.C., to Rear-Admiral. Rear-Admiral Sarel was placed on the retired list, to date 2nd November, and in consequence Captain Wilbraham T. R. Ford, A.D.C., was promoted to Rear-Admiral.

### Flag Appointments.

Commandant, Imperial Defence College.—Vice-Admiral Lionel G. Preston, C.B., is to be Commandant, Imperial Defence College, in succession to Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., to date 19th January, 1933. Vice-Admiral Preston, who was relieved as Fourth Sea Lord on 20th September, was appointed to the "President," additional, for duty outside Admiralty, to date 19th October.

Director of Naval Equipment.—Rear-Admiral Cecil P. Talbot, D.S.O., who was promoted to Flag rank on 1st July, has been appointed Director of Naval Equipment, in succession to Rear-Admiral P. L. H. Noble, C.B., C.V.O., to date 14th December. Rear-Admiral Talbot is to be appointed to the "President," additional, for duty inside Admiralty, to date 30th November.

Second Cruiser Squadron.—Rear-Admiral Percy L. H. Noble, C.B., C.V.O., is to be Rear-Admiral Commanding the Second Cruiser Squadron, in succession to Vice-Admiral E. A. Astley-Rushton, C.B., C.M.G., to date 15th December.

Chief of Staff, Home Fleet.—Rear-Admiral Dudley B. N. North, C.S.I., C.M.G., C.V.O., is to be Chief of the Staff, Home Fleet, to Admiral Sir John D. Kelly, G.C.V.O., K.C.B., in succession to Rear-Admiral R. M. Colvin, C.B., C.B.E., to date 14th December. Rear-Admiral North will be appointed to the "Nelson," additional, to date 10th December.

Rear-Admiral, 2nd Battle Squadron.—Rear-Admiral Ragnar M. Colvin, C.B., C.B.E., is to be Rear-Admiral, Second Battle Squadron, in succession to Rear-Admiral W. F. French, C.B., C.M.G., to date 15th December.

Rear-Admiral, Submarines.—Rear-Admiral Noel F. Laurence, D.S.O., is to be Rear-Admiral, Submarines, to date 10th December, in succession to Rear-Admiral C. J. C. Little, C.B., whose selection to be a Lord Commissioner of the Admiralty and Deputy Chief of the Naval Staff, in succession to Vice-Admiral Sir Frederic Dreyer, was announced in the last issue of the Journal.

Africa Station.—Vice-Admiral E. R. G. R. Evans, C.B., D.S.O., is to be Commander-in-Chief, Africa Station, in succession to Vice-Admiral H. J. Tweedie, C.B., to date 18th January, 1933.

Assistant Chief, Naval Staff.—Rear-Admiral S. R. Bailey, C.B.E., D.S.O., is to be Assistant Chief of the Naval Staff, in succession to Rear-Admiral J. K. Im Thurn, C.B., C.M.G., C.B.E., to date 28th February, 1933. Rear-Admiral Bailey will be appointed to the "President" for duty inside the Admiralty from 31st January.

### Personnel.

Cadets' Sea Training.—The conversion of the "Frobisher" into a Cadets' training ship is to be completed in December. It has been decided that she is

to be manned from and based on Chatham for her first commission. The port on which she will be based for her second and subsequent commission will be decided later. Captain E. J. Spooner, D.S.O., will command her.

DARTMOUTH COLLEGE.—In reference to an article in the Press indicating that Dartmouth College might be closed, the Admiralty, on 4th October, pointed out that on 8th June the First Lord stated in the House of Commons that he regarded the continuance of the College as a matter of the first importance. "It is not the normal practice of the Admiralty," said the official notice, "to comment upon statements which appear in the Press, and they only do so in this particular instance because this statement, if allowed to pass unnoticed, might cause doubt and anxiety in the minds of parents of Cadets now at Dartmouth, and to those who might be contemplating a naval career for their sons."

SPECIALISTS AND GENERAL SERVICE.—Certain decisions of the Admiralty with regard to the duties and service of specialist officers, in order to ensure that all have as much general service experience as possible, and that their duties in connection with specialist work make due allowance for this, were communicated by Fleet Order dated 23rd September.

ANTI-SUBMARINE SPECIALISTS.—The attention of officers has been drawn to the progress made in anti-submarine methods and the importance which is attached to this branch of the service. Candidates between 2½ and 5 years' seniority as Lieutenant are mainly required, but volunteers outside these seniorities will be considered. It is anticipated that appointments of A/S officers will in future, while at sea, enable these officers to combine their A/S duties with either other staff or general service duties, and so provide ample opportunity to widen their general service experience, at the same time making full use of their specialist qualification.

DIRECTOR OF PERSONAL SERVICES.—In the interests of good administration and with the special object of strengthening the naval element in the consideration which is brought to bear at the Admiralty on questions which affect naval personnel, it was decided to abolish the post of Director of Manning and to substitute for it that of Director of Personal Services, to which Rear-Admiral A. L. Snagge was appointed. The D.P.S. has charge both of the Manning Department and also of the welfare work now carried out by the Naval Personnel Committee, and has become the Naval Adviser of the Board on all questions particularly affecting the lower deck.

REVIEW OF SERVICE CONDITIONS.—New procedure for making representations in regard to Service conditions was announced in Fleet Orders dated 23rd September. A periodical investigation called "Admiralty Review of Service Conditions" will replace the former system of Welfare Conferences. It is contemplated that the first review will be ordered about the end of 1935.

SPECIAL SERVICE ENTRIES.—On 1st October, the entry of special service seamen, which had been closed since September, 1929, was resumed. The numbers to be entered will be regulated from time to time according to requirements. Ordinary seamen (S.S.) will receive six months' training at the R.N. Depots.

STABILISATION OF PAY.—On 5th August, it was notified that H.M. Government had had the whole question of the remuneration of the Services of the Crown under review, and had decided that emoluments should cease to vary automatically with changes in the index figure, but should be consolidated. They further decided that, subject always to the overriding consideration of the national financial position, final consolidation shall be deferred until 1st April, 1934. In the meantime,

the rates are to be stabilised at the current reduction from standard rates, viz., 11 per cent., which corresponds to a cost of living figure of about 49, subject to the following provision:—If during the above period of stabilisation, the index figure is either below 35 or above 60 for six consecutive months, the resultant situation will be reviewed in the light of all relevant considerations, including the cost of living.

LIEUTENANT-COMMANDERS' RETIREMENT.—The Admiralty announced on 5th August that it had come to their knowledge that some officers, whose seniority was just outside the zones given in A.F.O. 471 of 1932, desired to retire under the special terms offered therein. Accordingly, their Lordships approved that the restriction of the scheme to Lieutenant-Commanders of the years 1931 to 1925 and the second half of 1924 should be removed, and that applications to retire under the special scheme promulgated in A.F.O. 289, of 1931, should again be considered from Lieutenant-Commanders of the years 1923 and the first half of 1924. Applications were also permitted by Lieutenant-Commanders of seniority 1932 and Lieutenants of seniorities 1924 to 1926. These decisions brought about four hundred more officers within the scope of the scheme.

## MATERIAL.

THE 1929 PROGRAMME.—H.M.S. "Leander," the only cruiser authorized under this programme, will commission at Devonport for trials on 25th November. She should be completed for service about the end of February, 1933.

The submarine "Swordfish" commissioned at Chatham on 16th September as tender to the "Dolphin" for trials and for service. Her sister ship the "Sturgeon" is due for completion at Chatham in February, 1933. They will relieve submarines of the "H" class in the Sixth Flotilla, Portland. The larger submarine, "Thames," which was commissioned at the Vickers yard, Barrow, on 19th June, left there on 14th September for Lamlash and Campbeltown for trials. She will join the Fifth Flotilla, Portsmouth.

THE 1930 PROGRAMME.—The first of the three cruisers of this programme, H.M.S. "Achilles," was launched at the works of Cammell Laird & Co., Birkenhead, on 1st September. The cruiser "Orion" is due to be launched on 24th November, at Devonport; and the "Neptune," at Portsmouth, about the end of January.

Of the eight destroyers of this programme, H.M.S. "Daring" concluded her trials in the Channel on 21st September. Her designed speed of 35½ knots was exceeded comfortably, 38.2 knots being reached. The "Daring" was built by Thornycroft & Co. at their Woolston yard.

The last of the four sloops of the 1930 programme, H.M.S. "Dundee," was floated out of dock at Chatham on 20th September.

The "Guardian," netlayer and target towing ship, was floated out of dock at Chatham on 1st September. The "Guardian" will displace 3,050 tons, and has a length of 310 ft. Her machinery will be of 6,500 H.P. and has been manufactured by the Wallsend Slipway & Engineering Co. Oil fuel only will be used, and the designed speed is 18 knots. The only armament will be two 4-in. anti-aircraft guns.

The submarine "Porpoise," the first of three submarines in the 1930 programme, was launched at the Barrow works of Vickers-Armstrongs, Ltd., on 30th August.

THE 1931 PROGRAMME.—The allocation of the contracts for cruisers under this programme was announced on 30th August. The hull and machinery of the "Ajax" will be provided by Vickers-Armstrongs, Ltd., Barrow-in-Furness. The machinery for the "Amphion," to be built at Portsmouth Dockyard, will be supplied by Messrs. Beardmore & Co., Dalmuir. The machinery for the "Arethusa,"

to be built at Chatham Dockyard, will be provided by the Parsons Marine Steam Turbine Company, Wallsend-on-Tyne.

The flotilla leader of the programme, to be called the "Exmouth," will be built at Portsmouth Dockyard. The Fairfield Shipbuilding & Engineering Co., Govan, will provide her machinery. Contracts for the eight destroyers were announced on 21st September. The "Echo" and "Eclipse" will be built by W. Denny & Brothers, Ltd., Dumbarton. The "Electra" and "Encounter" will be built by Hawthorn, Leslie & Co., Ltd., Hebburn-on-Tyne. The "Escapade" and "Escort" will be built by Scott's Shipbuilding & Engineering Co., Ltd., Greenock. The "Esk" and "Express" will be built by Swan, Hunter & Wigham Richardson, Ltd., Wallsend-on-Tyne, and engined by the Wallsend Slipway & Engineering Co., Ltd.

The two dockyard-built sloops of the programme will be called the "Grimsby" and "Leith," and will be built at Devonport. The two contract-built sloops of the programme have been ordered from John Brown & Co., Clydebank.

Of the three submarines of the programme, the "Shark" will be built at Chatham.

The mining tender to the "Vernon" will be named the "Skylark," and will be built at Portsmouth.

GUNNERY FIRING SHIP.—The battleship "Iron Duke," flagship of the Grand Fleet at Jutland, after being demilitarised in accordance with the London Treaty, was recommissioned at Portsmouth on 4th October for service as gunnery firing ship. Captain R. M. King, D.S.O., was in command.

### ORGANIZATION AND DISTRIBUTION.

MEDITERRANEAN.—During the absence of H.M.S. "Queen Elizabeth" from the Mediterranean Station from 31st October until mid-February, 1933, the flag of the Commander-in-Chief will be flown in H.M.S. "Resolution." A sum of £98,582 is included in current Navy Estimates for the refit of the "Queen Elizabeth."

CHINA.—It has been decided that H.M.S. "Eagle" is to relieve H.M.S. "Hermes" on the China Station. The "Eagle" will commission in April, 1933, and leave for China about the end of that month. The "Hermes" will remain on the China Station pending the arrival of the "Eagle."

AMERICA AND WEST INDIES.—H.M.S. "Norfolk" recommissioned at Devonport on 6th September for service as flagship on the America and West Indies Station. She arrived at Bermuda on 15th October, and hoisted the flag a fortnight later in place of the "Delhi," which left to become flagship, Third Cruiser Squadron, Mediterranean, in succession to the "Curacoa."

EAST INDIES.—H.M.S. "Hawkins" recommissioned at Portsmouth on 21st September for service as flagship on the East Indies Station. The "Effingham," late flagship there, recommissioned in reserve at Portsmouth on 30th September as flagship of the Vice-Admiral Commanding, Reserve Fleet, in succession to the "Vindictive," which joined the reserve at Chatham.

### EXERCISES AND CRUISES.

HOME FLEET.—The autumn cruise began on 30th August with the visit of several ships to coast resorts—Folkestone, Great Yarmouth, Cromer, Southend, Hartlepool, Whitby, and other places being included. Subsequently, the ships and flotillas went to Rosyth and Invergordon, and an exercise programme was carried out during October. The Fleet was due to arrive at its home ports on 17th November.

MEDITERRANEAN.—The Fleet left Malta for its second summer cruise on 1st September, and was away on the eastern part of the station until 25th October. The Third Cruiser Squadron under Rear-Admiral F. L. Tottenham, C.B.E. (the "Curacoa," "Colombo," "Curlew" and "Ceres"), with the submarine "Rover," visited Bulgaria and Roumania. A call was made at Constantinople on 16th September, and Varna was visited from the 17th to 23rd, and Galatz and Constanza by divisions from 24th September to 4th October. On the receipt of news of the earthquake shocks in Macedonia and Thessaly on 27th September, the "Resolution," "Resource," "Keith," "Basilisk" and "Bulldog" left Mudros for Erissos to render assistance, and the Greek Government expressed their cordial thanks for the services rendered.

AMERICA AND WEST INDIES.—The flagship "Delhi" visited San Francisco, San Diego and Balboa on her way back from British Columbia to Bermuda. The "Durban," after standing by at Callao as a precautionary measure for three months, left there on 23rd September for Port San Juan, Antofagasta, Valparaiso and Talcahuano, and from 5th to 28th November was due at Port Stanley, Falklands. Normal independent programmes were carried out by other ships on this station.

SURVEYING CRUISE.—H.M.S. "Challenger," while surveying in uncharted waters off the coast of Labrador, struck a rock on Friday, 23rd September, six miles north of Ford's Harbour light, in Latitude 56.28½ North, Longitude 61.10 West. The weather was calm and she was later refloated. It was found that her forward oil tanks and several other compartments had been damaged. The sloop "Heliotrope" was ordered to proceed to the place and stand by. Both vessels arrived at Halifax on 5th October.

## THE FLEET AIR ARM

### MISCELLANEOUS.

FLYING PRACTICE DURING GENERAL SERVICE.—Instructions agreed between the Admiralty and Air Ministry for flying practice by naval and marine pilots when temporarily appointed to general service or corps duty were announced on 26th August. The flying practice of each officer should be spread as evenly over the year as possible. At home, practice flights should be made in aircraft of "C" Flight of the R.A.F. Base, Gosport. Abroad, they should be made in F.A.A. aircraft from a shore base of the R.A.F. Officers serving in ships, other than aircraft carriers, in which aircraft are embarked may be allowed to carry out their flying practice in these aircraft at the discretion of the S.N.O. of the squadron. Commanding officers are to forward to the Commander-in-Chief on 30th June and 31st December annually the names of all officers in their commands who are affected by this order, with details and dates of flying practices carried out by them during the previous half year.

CRUISERS' AIRCRAFT.—Ships of the Second Cruiser Squadron, Home Fleet, are being supplied first with the new "Osprey" aircraft, the naval adaptation of the Hawker "Hart" day bomber for fleet reconnaissance duties. This Squadron includes the newest cruisers in the Navy.

SHORT AIR COURSE.—The duration of the short air course for junior officers will in future be three weeks, but may be reduced, at the discretion of the senior officer, to two weeks should flying facilities render this necessary.

## ROYAL MARINES

General A. G. Little, C.M.G., was placed on the retired list to date 1st October; consequently Lieutenant-General R. V. T. Ford, C.B., C.B.E., Adjutant-General R.M., was promoted to General; Major-General H. A. H. Jones to Lieut.-General; Colonel Commandant (temp. Brigadier) R. F. C. Foster, C.B., C.M.G., D.S.O., to Major-General; Colonel 2nd Commandant R. H. Darwall, C.B.E., D.S.O., to Colonel Commandant (temp. Brigadier), and to command the Chatham Division; and Lieut.-Colonel C. E. S. Wright, O.B.E., to Colonel 2nd Commandant.

## ROYAL NAVAL VOLUNTEER RESERVE

NEW AUXILIARY RESERVE.—On 18th August, the Secretary of the Admiralty announced the institution of a Royal Naval Wireless Auxiliary Reserve (R.N.W.A.R.) in Great Britain and Northern Ireland, to be recruited largely from wireless amateurs owning transmitting sets. The object is to provide a reserve of operators trained in naval procedure for naval service afloat or ashore in war or emergency. The country will be divided into areas, districts, sections and units. Units will consist of small groups up to a maximum of five transmitting stations. Particulars may be obtained from the Admiral Commanding Reserves, Queen Anne's Chambers, Tothill Street, London, S.W.1.

LONDON DIVISION DISPLAY.—Night displays by the London Division, R.N.V.R., were given from 5th to 9th September, inclusive, on board the drillship "President" off Blackfriars. Each evening the crew went to night defence stations, dowsing all lights and manning guns and searchlights. The ship's motor boats made attacks to represent torpedo craft, and were fired upon, the bridge and deck of the "President" being flood lighted so that the evolutions on board could be seen from the Embankment. "Fires" were suppressed and "wounded" taken below under conditions approximating to those of active service. Wireless exercises were conducted with other drillships round the coast, and signals were exchanged with a station on the roof of a building on the opposite side of the Thames.

## FOREIGN NAVIES

### CHINA

DESTROYER SUNK.—A message from the Hong Kong Correspondent of *The Times* on 8th July stated that the Chinese destroyer "Fei Ying," which the naval insurgents had taken to Hainan Island, was sunk by one of the Cantonese aeroplanes in their raid on Hoihow on 6th July, with the loss of 20 killed. The "Fei Ying" was built at Stettin in 1895.

ADMIRAL ASSASSINATED.—Rear-Admiral Wu Kuang-tsung, Chief of the Hydrographic Department of the Ministry of the Navy, was assassinated on 21st September at his residence at Shanghai. A native of Fukien, he was 63, and was educated under British instructors at the Foochow Naval College.

### CHILE

NEW COMMANDER-IN-CHIEF.—On 10th September, Rear-Admiral Edgardo von Schroder was appointed Commander-in-Chief of the Chilean Fleet, and hoisted his pennant on board the cruiser "O'Higgins." The appointment was well received as a guarantee for the restoration of discipline.

## FRANCE

NEW BATTLE CRUISER.—On 27th October, a report that the French Government had finally decided to proceed with the construction of the battle-cruiser "Dunkerque," of 26,500 tons, was officially confirmed. This ship was authorised by the Naval Law of 10th July, 1931. Particulars of her design were given in the May issue of the JOURNAL. Orders have been given for the keel to be laid down at Brest.

DESTROYER SPEEDS.—In speed trials off Lorient on 3rd September, the flotilla leader "Cassard" was reported to have reached 43.4 knots, and to have maintained 42.9 knots for three hours. Her sister ship the "Gerfaut" had previously held the record with 43.2 knots, and had maintained 42.7 knots for 1½ hours. Another vessel of this class recently tried is the "Tartu," which maintained 41.2 knots for three hours, and 38.58 knots for eight hours.

TRAINING CRUISE.—The new training cruiser "Jeanne d'Arc," completed in 1931, has done well on her first cruises. According to the Paris Correspondent of *The Naval and Military Record*, she has been tested in a cruise to South America and a three months' cruise in the Levant with 120 cadets on board. Rough weather was experienced, but she behaved well, keeping her speed in heavy seas, and her smart appearance and pleasing internal comfort were favourably commented upon everywhere.

NEW SUBMARINES.—The submarines "Héros" and "Centaure" were launched at Brest on 14th October. They are of 1,379 tons, armed with one 3.9-in. gun, one smaller A.A. gun, and eleven torpedo tubes.

The "Surcouf," the largest submarine yet built for any navy, left for a 5,000 mile cruise to African ports in October. The "Surcouf" has a surface displacement of 2,880 tons, with a speed of 18 knots, and is armed with two 8-in. guns and fourteen torpedo tubes. The crew numbers 110 men.

ACCIDENT TO THE "PERSÉE."—Fire broke out in the engine room of the submarine "Persée" during trials on 27th September, as the result of the bursting of a casing of one of the Diesel engines. The casualties were five killed or died from injuries, one severely injured and nine slightly injured.

## GERMANY

THIRD ARMOURED SHIP.—Orders were issued in September to the naval yard at Wilhelmshaven to begin work on 1st October on the third armoured ship of the German replacement programme. This will be the "Ersatz-Braunschweig." The first vessel of the programme, the "Deutschland," was launched on 31st May, 1931. The second, the "Ersatz-Lothringen," was laid down on 25th June, 1931. A third ship was to be begun in 1932 and a fourth in 1934. When the first instalment was voted for the former in the Naval and Military Estimates of 1932-33, a proviso was inserted that the Government would await the results of the Disarmament Conference before proceeding with the work. As the present Government considers that the Conference has had "no practical result," construction will begin according to programme.

COMPLETION OF THE "BREMSE."—The despatch vessel "Bremse," laid down in 1930, was commissioned in August after satisfactory trials. She is of 1,230 tons, and normally, her armament is four 4.1-in. and two smaller guns; but it can be varied as required for her training duties. Her length is 318½ ft., beam 31 ft., and the draught of water 9½ ft. Officially she is classed as a gunnery tender, but could also be utilised as a minelayer or small cruiser. She is propelled by eight

M.A.N. double-acting, two-stroke geared Diesel engines, developing 25,000 horse-power, and her designed speed of 27 knots is stated to be the fastest of any Diesel-driven ship yet built.

THE LATE ADMIRAL ZENKER.—Admiral Zenker, who as a Captain commanded the battle-cruiser "Von der Tann" at Jutland, died in September and was buried at sea from the cruiser "Köln," the first cruiser of which name was also commanded by the late Admiral.

RAISING OF THE "NIOBE."—The training ship "Niobe" which capsized on 26th July has been raised. The work was accomplished in a remarkably short time, and reflected great credit on the salvage operators. Divers succeeded in placing steel cables under the wreck which were connected with the salvage ship "Hiev," a vessel provided with powerful cranes. In three days it was brought in, under water, to Kiel Fiord and deposited on the bottom in seven fathoms. Here the work was taken up by two lift-lighters which carried the wreck into shallow water, where in due course it was pumped out.

According to press reports, the German Naval Union is collecting funds to build a new training ship.

## GREECE

BRITISH MISSION RECALLED.—On 19th July, it was announced at Athens that, with the British Government's consent, the contract for the British Naval Mission had been cancelled for reasons of economy. A similar request by Greece was made to France with regard to the French Military Mission. A farewell ceremony in honour of the British Mission took place at the Naval Academy on 11th August, when the Greek Minister of Marine conferred upon Captain L. E. Holland, R.N., Chief of the Mission, the Gallantry Medal of the First Class. Other members of the Mission received the Second Class of the same Medal.

## ITALY

NAVAL MANŒUVRES.—The Italian naval manœuvres took place during the first ten days of August. Force "A" was under Vice-Admiral Burzagli; and Force "B," under Rear-Admiral Moreno. The former was set the task of raiding two "B" Force convoys making for Taranto from the Tripolitaine coast. In spite of several attacks from the "A" force, the two "B" convoys got safely through from Tripoli and Bengazi to Taranto, although with loss. Out of fifteen ships in the convoys, five were "sunk"; of their escort, one battleship was "sunk," another "seriously damaged," and a 10,000-ton cruiser, a destroyer, and several minor craft and submarines were "sunk." The use of the battleships "Andrea Doria" and "Caio Duilio" to stiffen the escorting forces for the convoys was held to have been amply justified, as they served a valuable purpose as rallying points. One correspondent affirmed that the greatest obstacle met with by the lighter raiding craft of Vice-Admiral Burzagli was the two battleships, against the armour of which, and their more powerful guns, the swifter but less protected and less powerful vessels of Force "A" were of no avail.

These manœuvres have provoked much comment in the French Press, and it has been stated that they demonstrated the dangers which might arise to the transport of French troops from the African coast in time of war.

The conclusion of the exercises was witnessed by the King of Italy, who arrived at Taranto, and reviewed the fleet from his yacht the "Savoia."

Writing on 14th August, *The Times* Correspondent at Rome stated that much satisfaction was expressed with the result of the manœuvres, and the lesson drawn from them was that, although it is possible in the event of war to transport troops and war material across the Mediterranean, such a task is attended by great risks and would result in serious losses to both convoys and escorting ships.

VISIT TO BULGARIA.—A squadron of the Sixth Division of the Italian Navy, including the light cruiser "Quarto," flagship of Admiral Moreno, and four destroyers, arrived at Varna on 8th July on a visit to Bulgaria. The Admiral, fifteen officers, and fifty seamen, proceeded to Sofia, where Admiral Moreno was received in audience by the King and later had luncheon with the King and Queen.

## NETHERLANDS

NEW CONSTRUCTION.—The order for the third cruiser has been given to Wilton-Fijenoord of Rotterdam. The greater part of the engines will be supplied by the De Schelde Co. of Flushing, and the electric plant by H. Croom Co. of Rotterdam.

During the earlier months of the current year four new destroyers the "Van Galen," "Witte de With," "Banckert" and "Van Ness" have been put into service. They are craft of about 1,260 tons and 35 knots speed and will serve as flotilla leaders and for the instruction of personnel.

The Colonial Department of the Ministry of Defence have taken delivery of the mine-layer "Gouden Leeuw."

The submarine K.XVII, built at Wilton's Yard, Fijenoord for service in the Indies was launched in July.

## NORWAY

NEW CONSTRUCTION.—The new mine-layer which is building at the Naval Yard at Horten was due to be launched this Autumn. She is to be armed with four 4.7-inch guns.

The Ministry of Defence proposes to build two minesweepers of 250 tons each with a speed of 12–14 knots. At present the Norwegian Navy has no minesweepers. These two vessels will also act as guard ships.

## PORTUGAL

NEW CONSTRUCTION.—Two new destroyers, the "Tego" and "Douro" are building at the works of Sociedade de Construcoes et Reparacoes Navaes at Lisbon. These craft are built to the plans of the Yarrow Company, and are similar in all respects to those building at Yarrow's Works, at Glasgow.

The new sloop "Goncalo Velho" was launched on 3rd August at Hebburn, Newcastle-on-Tyne. This is the first of two vessels of the same class building in this country for the Portuguese Government. Her sister ship is due to be launched in the Autumn.

## PERSIA.

SMALL CRAFT BUILT IN ITALY.—Two new sloops and four motor launches, built in Italian yards, left Naples on 17th September for Taranto and the East. The sloops or gunboats are of 950 tons, with a speed of 15 knots, and carry two naval 4-in., two 3-in. A.A., and two machine guns. The six craft were manned by 29 officers and 330 men from Persia who had been trained in Italy, and accompanying them were nine Italian officers and a few Italian engineers. The cost of the six vessels is reported to have been about £380,000.

## SPAIN

TRAINING SHIP CRUISE.—The training ship "Juan Sebastian de Elcano" visited Plymouth in September and stayed nearly a week. Captain Joaquin Lopez Cortijo was in command.

## SWEDEN

NEW CONSTRUCTION.—The first of the new vedette ships building at Karlskrone was due to be launched in November. These are craft of 250 tons with a speed of 25 knots and mounting two 75 mm. guns. They are intended principally as submarine chasers, but will also act as minesweepers. All four are expected to be ready early in 1933.

## UNITED STATES

FLEET IN THE PACIFIC.—Admiral William V. Pratt, Chief of the Bureau of Operations, announced in September that the Atlantic Fleet would be kept in the Pacific until after the next concentration of the fleet in the winter. The official reasons given for this decision were "economy and better training facilities."

NEW DESTROYER ORDERS.—Mr. Adams, Secretary of the Navy, announced on 27th September that the Government would undertake immediately the construction of three destroyers. Congress had voted funds for them, he explained, but construction was postponed owing to the economic situation. This decision had been changed in order "to give steady employment to our faithful employees" and to relieve unemployment. The destroyers belong to the 1931-32 programme, in which there were originally eleven destroyers; of these one was to be a leader of 1,850 tons and the rest of 1,500 tons. Only five were proceeded with—the "Farragut," "Dewey," "Hull," "MacDonough" and "Worden."

FLEET COMMAND CHANGE.—Admiral Richard H. Leigh, formerly Commander of the Battle Force, became Commander-in-Chief, United States Fleet, on 10th August, in succession to Admiral Frank H. Schofield, who was appointed a Member of the General Board of the Navy. Admiral Leigh is 62, and entered the Naval Academy in 1887. He was a member of the inquiry into the loss of the "Maine" during the Spanish-American War. In 1913 he was appointed to command the "Galveston" on the Asiatic Station. From 1915 to January, 1918, he was in the Bureau of Steam Engineering, and was then placed in charge of all the submarine chasers in European waters. He experimented with listening devices and was sent to Italy to select and construct a submarine chaser base. After the Armistice, he became Assistant Chief of Staff to Admiral W. S. Sims in London. Since 1920 he has held various high posts at the Navy Department and afloat.

# ARMY NOTES

## HOME

### Appointments and Promotions

H.M. the King has approved of the following appointments :—Colonel (temporary Brigadier) D. J. C. K. Bernard, C.M.G., D.S.O., as Aide-de-Camp to the King, in succession to Colonel (temporary Brigadier) C. P. Heywood, C.M.G., D.S.O., promoted ; Colonel Commandant (temporary Brigadier) R. D. Ormsby, C.B.E., R.M., as Royal Marine Aide-de-Camp to the King, in succession to Colonel Commandant (temporary Brigadier) R. F. C. Foster, C.B., C.M.G., D.S.O., A.D.C., R.M., promoted ; Major-General H. C. R. Hime, D.S.O., M.B., late Royal Army Medical Corps, as Honorary Physician to the King, in succession to Colonel J. C. Kennedy, C.B.E., M.D., late Royal Army Medical Corps, retired.

Colonel J. P. Helliwell, C.B.E., as Colonel Commandant, The Army Dental Corps, in succession to Lieutenant-General Sir T. H. John C. Goodwin, K.C.B., K.C.M.G., D.S.O., F.R.C.S., Colonel Commandant, Royal Army Medical Corps.

Colonel W. G. S. Dobbie, C.B., C.M.G., D.S.O., to be Commandant, School of Military Engineering, Chatham (also Inspector of the Royal Engineers and Commanding Chatham Area and Depot, Royal Engineers), with effect from 18th February, 1933, in succession to Major-General H. L. Pritchard, C.B., C.M.G., D.S.O.

Colonel F. C. Larmour, D.S.O., Royal Army Ordnance Corps, to be Commandant and Chief Instructor, Royal Army Ordnance Corps School of Instruction, with effect from 14th July, 1933.

The Reverend A. R. Yeoman, C.M.G., M.A., Chaplain to the Forces, 1st Class (Church of Scotland), to be Deputy Chaplain-General to the Forces, in succession to the Reverend G. Standing, D.S.O., M.C., Honorary Chaplain to the King.

The following promotions have been made :—

General the Viscount Byng, G.C.B., G.C.M.G., M.V.O., D.C.L., LL.D., Colonel, 10th Royal Hussars (Prince of Wales's Own), retired pay, to be Field-Marshal, in succession to the late Field-Marshal the Viscount Plumer, G.C.B., G.C.M.G., G.C.V.O., G.B.E., D.C.L., LL.D., Colonel, The York and Lancaster Regiment.

Lieutenant-General Sir Cecil F. Romer, K.C.B., K.B.E., C.M.G., to be General ; Major-General H. H. S. Knox, C.B., D.S.O., to be Lieutenant-General ; Colonel E. O. Lewin, C.B., C.M.G., D.S.O., Colonel C. P. Heywood, C.M.G., D.S.O., Colonel R. J. Collins, C.M.G., D.S.O., Colonel T. G. F. Paterson, D.S.O., F.R.C.S. I.M.S., K.H.P., to be Major-Generals.

### Amalgamation of Units

Royal Engineers, Fortress Companies.—H.M. the King has approved the absorption of the 16th, 22nd and 45th (Fortress) Companies, Royal Engineers, into the 4th (Fortress) Company, Royal Engineers.

## Regimental Colours

Centre Badges.—The following Centre Badges for Regimental Colours have been approved :—

The South Wales Borderers: Within a wreath of immortelles the Roman numeral XXIV.

The wreath of immortelles refers to the wreath presented to the old 24th Foot by Queen Victoria in 1880, in commemoration of the gallant conduct of Lieutenants Melvill and Coghill, who lost their lives in saving the Queen's Colour of the 1st Battalion after the Isandlwana disaster on 22nd January, 1879, during the Zulu War, and for the noble defence of Rorke's Drift on the same day and following morning. The "XXIV" represents the number borne by the regiment from 1742 until 1881.

The Lancashire Fusiliers: The Roman numeral XX ensigned with the Red Rose.

The Red Rose associates the regiment with its county and the "XX" is its old number.

The Royal West Kent: The White Horse of Kent with the motto " Invicta." The White Horse of Kent has been the clothing badge of the regiment for many years.

The Manchester Regiment: A Fleur-de-Lys.

This was the clothing badge of the old 63rd (now 1st Battalion), and was worn from about 1795 for a long period. In 1923 it was again authorised as the clothing badge of the regiment, displacing the Arms of the City of Manchester.

## Pay

Pay of Army Officers.—A Royal Warrant published in an Army Order on 5th August provides that, for the period of six months from 1st October, 1932, there shall be no change in the existing rates of pay, half-pay and service retired pay of Army officers, which have been in operation since 1st October, 1931, and that, unless altered in the meantime by a further Royal Warrant, these rates shall remain in force until 31st March, 1934.

An Order by the King published in a further Army Order makes similar provision in regard to the emoluments of officers of the Militia and the Territorial Army, and of retired officers appointed to the Staff of, or as Adjutants in, the Territorial Army.

The rates of pay, etc., of Army Officers are at present subject to review every six months in the light of the cost of living index figures, and the normal operation of the formula prescribed would have entailed a reduction in the current rates from 1st October, 1932. The Government have, however, decided (as already announced in the case of the pay of Civil Servants) that the emoluments of Crown servants should now cease to vary automatically with changes in the index figure, and should be stabilized; but that, subject to the over-riding consideration of the national financial position, final stabilization should be deferred until 1st April, 1934. In accordance with this decision, the rates will be stabilized at the current rates until 31st March, 1934, provided that, if the cost of living index figure remains below 35 or above 60 for six consecutive months, the resultant situation will be reviewed in the light of all relevant considerations including the cost of living.

The current rates of pay, etc., of Army officers are based on a reduction of 11% from the standard rates which corresponds to a cost of living figure of about 49.

## TERRITORIAL ARMY

### Coast Defence Reorganization

(1) As a result of the investigations made in recent years into the problem of Coast Defence in Great Britain, the Secretary of State for War in his Memorandum on the Army Estimates for 1932 stated last February that it had been decided to entrust to the Territorial Army the entire responsibility for manning these coast defences, and to reorganize the Territorial Army units so as to bring them into proper relation with the existing sea-front armament and lights, and to provide new units necessary for anti-aircraft protection.

(2) A meeting of representatives of the War Office, the Commands and the Territorial Army Associations was held on 6th April to discuss the draft scheme which had been prepared.

Since that meeting, Commands and Territorial Army Associations concerned have had the opportunity to examine and comment on the War Office proposals. As a result the scheme in detail, as finally approved, has now been issued to all concerned.

(3) The main features of the scheme are as follows :—

(i) It provides for the re-organization of existing Territorial Army Coast Defence units and their allotment to defended ports, in order to bring those units intc proper relation to the requirements of sea-front armament and lights ;

(ii) It provides the necessary anti-aircraft units, either by the conversion of existing coast defence units not required for the sea-front defences, or, in certain cases, by the conversion of field and medium artillery batteries which, owing to their proximity to the ports concerned, are suitably placed for immediate manning duties in war ;

(iii) It makes certain adjustments in those artillery brigades which are affected by this conversion.

(4) Men up to fifty years of age may be enlisted in coast defence units for Home Service only provided that the number of such men does not exceed 33⅓ per cent. of the establishment of units.

(5) All ranks commissioned, enlisted, or re-engaged in future, both in sea-front and anti-aircraft units, will be required to sign an agreement undertaking to come up for service as and when required, even though the Territorial Army has not been embodied.

(6) The new establishments published with the scheme will come into force on 1st October, 1932, and units will have completed their reorganization by 31st March, 1933.

(7) The normal titles of the new units have not yet been finally decided.

### Territorial Army Voluntary Camps

The following letter conveying the Army Council's appreciation of the public-spirited action of members of the Territorial Army and others, which has enabled voluntary camps to be held this year in spite of the difficulties imposed by the exigencies of the financial situation, has been addressed to the Chairmen of all Territorial Army County Associations, and to the General Officers Commanding the Military Commands in Great Britain :—

THE WAR OFFICE,
LONDON, S.W.1.
*6th September*, 1932.

SIR,

I am commanded by the Army Council to inform you that they have had under review the Territorial Army training in 1932.

Although the training had to be limited by the decision to forego the normal annual camps in view of the national need for economy, the public-spirited action of members of the Territorial Army in attending voluntary camps and of private individuals in assisting them to do so has made it possible for considerably more training to be carried out and for far greater results to be achieved than could have been anticipated.

The Army Council wish to thank all those who, by private contributions or the free use of land, have thus supplemented the training grant and made voluntary camps for short periods possible, and those who have granted their employees facilities to attend these camps.

They recognize that Territorial Army Associations and all ranks concerned of the Territorial Army have undertaken the work involved with praiseworthy energy, and that, while some members have been unable to afford to attend camps without normal pay, many have carried out several days' valuable training with little, and in some cases, no pay.

They have observed with the utmost satisfaction the zeal and interest displayed in training and the determination shown by all to maintain the high efficiency of the Territorial Army in spite of the necessarily restricted facilities.

The Council have noted once again, in those many cases where Territorial units have been quartered in barracks alongside their comrades of the Regular Army that the highly beneficial understanding that has been further developed between them has brought home to all ranks of both the Regular and Territorial Armies that the two Armies are really one.

The Council desire, therefore, to record their appreciation of the determination and the patriotic spirit with which the Territorial Army has met and surmounted the difficulties imposed upon it during the present year by the exigencies of the financial situation.

I am, Sir,
Your obedient Servant,
H. J. CREEDY.

### TERRITORIAL ARMY IN WAR

Articles have recently appeared in certain organs of the Press commenting on certain changes in the conditions of service of the Territorial soldier which, it is stated, are contemplated by the War Office.

It is officially announced that no decision of any kind in connection with such changes has been taken. The matter has been under discussion with the Councils of County Territorial Associations, and this discussion will be resumed in the autumn. There is, however, no intention, nor has there ever been any suggestion, of using the Territorial Army on mobilization as a draft-finding body for the Regular Army.

## DOMINION FORCES

### ALLIANCE

H.M. the King has approved of Les Fusiliers Mont Royal, Non-Permanent Active Militia of Canada, being allied to the York and Lancaster Regiment.

## INDIAN ARMY

### APPOINTMENT

Major-General H. B. D. Baird, C.B., C.M.G., C.I.E., from Commander, Kohat District, has been appointed Commander, Deccan District, in succession to Colonel A. F. Hartley, D.S.O. (Indian Army).

## FOREIGN

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### ALBANIA

THE GENDARMERIE.—The Albanian Gendarmerie is at the disposal of the Minister of the Interior for the preservation of order. Its total strength is at present approximately 150 officers and 3,000 other ranks and its training is supervised by a mission of eight British officers known as "Organizers" and "Inspectors."

### FRANCE

CHANGES IN ARMY ORGANIZATION.—As a result of the laws of 16th and 17th March, 1932, and of five decrees dated 8th July (published on 20th July, 1932) certain changes have been made in the organization of the French Army.

The law of 16th March, 1932, was one of the first results of the imminent completion of the frontier fortifications and A.A. defensive organization. Its purpose was to meet the increased requirements in artillery and engineers of these new defences.

The law of 17th March, 1932, not only extended this re-organization to the units of infantry and field artillery required to occupy and defend the fortified areas, but it rendered the law of 28th March, 1928, much more flexible by giving powers to the Minister of War to enable him to carry out certain modifications in the organization of the army and to fix certain establishments by decree; this was considered necessary to enable the army to keep abreast of the times and modify its organization continually to meet the new developments in fortification and motorization, without having recourse to numerous amendments of the law.

The five decrees, dated 8th July, 1932, give effect to most of the provisions of the laws of 16th and 17th March, 1932, and are concerned with the number and composition of—

(i) Various infantry units.
(ii) Certain cavalry units.
(iii) The squadrons, companies and special staff of the *Train*.
(iv) Various artillery units.
(v) Certain engineer units.

As a result of these two laws and five decrees, the whole of the establishments affecting the infantry, cavalry, artillery and engineers, annexed to the law of 28th March, 1928, and those for the *Train* published in the decree of 25th December, 1929, are cancelled, and replaced by new establishments except in such cases as the Foreign Legion infantry and cavalry, remount companies, cavalry detachments attached to schools and the Saharah companies, which will form the subject of further special decrees.

### MOROCCO

FRENCH ZONE: *Operations.*—Minor operations were carried out during July by the Marrakech and Tadla mobile columns, and a steady advance has been

made without many losses. A few casualties have, however, occurred as a result of raids on posts and convoys. Thus on 7th July an attack on a convoy caused the following casualties: two French non-commissioned officers and five natives killed, one French officer, one non-commissioned officer and three natives wounded.

On the night of 13th July tribesmen counter-attacked a position which had been occupied that morning without loss by a detachment from Meknes. The tribesmen were driven back but the French lost one non-commissioned officer and one soldier of the Foreign Legion killed; one French officer, seven legionaries and one French soldier wounded.

In the course of an engagement against raiding tribesmen on 25th July, one French officer and one non-commissioned officer were killed (the latter, *Maréchal des logis* de Sandras, was the nephew of M. Herriot, the Prime Minister); three native soldiers were also killed and two wounded. The raiders, who had penetrated behind the French lines, were put to flight with considerable loss.

*Oudjda-Fez railway.*—General Messimy, former Minister for War and the Colonies, recently undertook an official tour in Morocco in his capacity of *Rapporteur* to the Senate on the proposed loan required to finance the completion of this railway.

In his report, after mentioning the advantages which will accrue to Morocco's agriculture and its mining industry, General Messimy stresses the importance of this railway from the military point of view, and points out that whereas during the Riff campaign of 1925-26 reinforcements from Algeria and Tunisia reached Tadla very slowly, it will soon be possible to run fifteen military trains every twenty-four hours on this line when completed.

Spanish Zone.—On 15th June the Council of Ministers at Madrid approved a draft law authorizing a further issue of the Maghzen Loan for Public Works to the amount of 24 million pesetas (£600,000).

The proceeds of this loan are intended principally to finance the completion of the Tetuan—Melilla road. The Minister for War hopes that once this road is completed and easy communication assured between the two zones, a further considerable reduction of troops can be made.

## SPAIN

Risings at Madrid and Seville.—On 10th August armed risings broke out at Madrid and Seville. The Madrid rising failed completely, lasting only three hours. At Seville the rising was led by General Sanjurjo, Director-General of the Customs Guard (*Carabineros*) and recently Director-General of the Civil Guard. General Sanjurjo announced that the movement was against the present Government and not against the Republic. His personal influence and the assurance that the movement was general throughout Spain won over the Seville garrison, i.e., the troops of the 2nd Division (who refused to obey their divisional commander) and a battalion of the Civil Guard. As soon as it was seen that the rising was purely local, the troops reverted to the command of their general, and the local authorities resumed their office. After the outbreak the Prime Minister announced that the details of the plot had been known to the Government for several months.

The complete failure of the risings has greatly strengthened the hands of the Government. On 11th August a law was passed authorizing the dismissal of all military and civil functionaries guilty of acts of hostility or contempt against the Republic, and the opportunity has been taken to dispense with the services of any on whose loyalty the Government could not depend. In consequence of the risings Generals Sanjurjo, Cavalcanti, Goded (recently Chief of the Staff), Villegas (recently G.O.C. 1st Division), Mola, Millan Astray (creator of the Spanish

Foreign Legion) and Loriga were arrested, also various other officers on the active list, and several distinguished generals and admirals of the reserve who were members of one or the other of General Primo de Rivera's Cabinet. General Don Miguel Cabanellas, the Director-General of the Civil Guard (recently C.-in-C. Morocco), General Gonzalez, the G.O.C. 2nd Division and various other officers, whose loyalty and zeal were suspected, have been relieved of their appointments and compulsorily retired. In addition several retired officers have had their pensions stopped.

General Sanjurjo was tried and sentenced to death on 25th August, the sentence being subsequently commuted by the Government to imprisonment for life.

## UNITED STATES

WAR DEPARTMENT APPROPRIATION BILL FOR THE FISCAL YEAR, 1ST JULY, 1932, TO 30TH JUNE, 1933: (1) *Summary of Appropriations.*—The annual Appropriation Bill for the Army usually receives Presidential signature in February. This year, after seven months consideration by Congress and a struggle of quite unusual severity, it was eventually signed on 14th July, two weeks after the commencement of the financial year for which it makes provision.

The following is a summary of the final appropriations as compared with those for the preceding year :—

| | 1931-32. | 1932-339. | *Increase or decrease.* |
|---|---|---|---|
| | $ | $ | $ |
| Military expenditure .. .. | 335,505,965 | 290,300,024 | — 45,205,941 |
| Non-military expenditure .. | 111,067,270 | 106,578,489 | — 4,488,781 |
| Total .. .. .. | 446,573,235 | 396,878,513 | — 49,694,722 |

(2) *Principal increases and decreases.*—The following items represent the principal savings effected in military expenditure :—

| | $ |
|---|---|
| (*a*) Subsistence of the army .. .. .. | 10 millions approx. |
| (*b*) Clothing and equipage .. .. .. | 2.5 ,, ,, |
| (*c*) Army transportation .. .. .. | 2.5 ,, ,, |
| (*d*) Military post construction .. .. | 18.5 ,, ,, |
| (*e*) Barracks and quarters .. .. .. | 2 ,, ,, |
| (*f*) Air corps .. .. .. .. .. | 6 ,, ,, |

The only increased vote of any consequence is that for the Ordnance Department: an extra 400,000 dollars has been allotted to this supply branch. The total sum earmarked for mechanization is 504,000 dollars, of which 200,000 dollars is expressly designated for the purchase of Christie tanks.

Last year the curve of expenditure on the U.S. Army, which had tended upwards for the six previous years, dropped to the extent of 5 million dollars, due to lower commodity prices and a small cut in the Air Corps vote. This year's cut of 45 million dollars (about £11 million) can also be accounted for, to a considerable extent, by still lower commodity prices and by expedients, such as the reduction of stocks and the transference of a large sum for barrack construction to a civil vote. When every allowance for such factors has been made, there remains a sum estimated at 8 million dollars (about £2 million) representing a real cut in the Army vote, the effect of which must be felt immediately in the service. The major part of this sum is to come off the allotment to the Air Corps.

# AIR NOTES

## ROYAL AIR FORCE

### Appointments.

Air Marshal.—Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., to be Air Officer Commanding-in-Chief, Air Defence of Great Britain, on or about 1st April, 1933, *vice* Air Marshal Sir W. Geoffrey H. Salmond, K.C.B., K.C.M.G., D.S.O., on the latter taking up his appointment of Chief of the Air Staff.

Air Vice-Marshals.—Edgar Rainey Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., to be Director of Operations and Intelligence, Air Ministry, and Deputy Chief of the Air Staff, on or about 1st December, 1932, *vice* Air Vice-Marshal Charles Stuart Burnett, C.B., C.B.E., D.S.O.; Arthur Murray Longmore, C.B., D.S.O., to be Air Officer Commanding, Inland Area, Royal Air Force; on or about 1st February, 1933; Charles Stuart Burnett, C.B., C.B.E., D.S.O., to be Air Officer Commanding, Iraq Command, about 1st December, 1932.

Air Commodores.—William Gore Sutherland Mitchell, C.B.E., D.S.O., M.C., A.F.C., to be Commandant of the Royal Air Force College, Cranwell, on or about 1st February, 1933; Christopher Lloyd Courtney, C.B., C.B.E., to be Director of Training, at the Air Ministry, on or about 1st February, 1933; Arthur Sheridan Barratt, C.M.G., M.C., to Headquarters, R.A.F., India, for duty as Senior Air Staff Officer, 7th September, 1932; Charles Dempster Breese, A.F.C., to be Senior Air Staff Officer, Fighting Area, 15th November, 1932; Ernest Leslie Gossage, D.S.O., M.C., to Headquarters, Air Defence of Great Britain, 1st July, 1932.

Group Captains.—William Sholto Douglas, M.C., D.F.C., to Imperial Defence College as Instructor, 28th May, 1932.

### Personnel.

Intelligence Staff and Special Service Posts.—An Air Ministry Order (No. A.220/1932) states that, as an adequate intelligence organization is an important factor in the general scheme of control in those Eastern countries for whose defence the Royal Air Force is responsible, and as it is necessary to maintain a constant flow of officers with a knowledge of Middle Eastern languages and experience of intelligence work in order to meet staff requirements in time of war, the following policy has been laid down in regard to the provision and training of officers for this type of duty:—

*Junior posts.*—About half the posts for Flight Lieutenants (air staff intelligence) on the strength of the headquarters of the Iraq, Palestine and Transjordan Middle East, and Aden commands will be filled by permanent officers, and the remainder by officers specially appointed on the supplementary list or seconded from the Army for this type of work only. In principle, all officers actually performing staff duty at headquarters will be permanent officers, and a proportion of the officers employed on special service duty away from headquarters will also be permanent officers.

*Training.*—Two permanent officers of the rank of Flight Lieutenant or Flying Officer will be selected under the procedure referred to in A.M.W.O. 519/30, and sent each year to Iraq to study a Middle Eastern language—Arabic or Kurdish, at the discretion of the A.O.C.—for a period of one year or until they pass the preliminary examination (K.R. & A.C.I., para. 412), whichever period is the shorter. Arrangements for their training during this period, which will be whole-time and at public expense, will be made by the A.O.C., Iraq.

*Subsequent employment.*—On conclusion of training, officers will be posted for a further two years tour of duty as intelligence officers in Iraq, Aden, Palestine, Transjordan or the Sudan. Towards the end of this period they should be able to pass the interpretership examination and receive the prescribed awards of £60 for qualification as a 1st class interpreter or £30 for qualification as a 2nd class interpreter, and gain an antedate for promotion (para. 353, clauses 9 and 10 of K.R. & A.C.I.). Officers who have rendered satisfactory service in intelligence duties will receive special consideration when selection of officers to undergo the Staff College Course is being made, and the opportunity, therefore, of gaining a further antedate for promotion.

*Higher intelligence posts.*—Higher intelligence posts in the rank of Squadron Leader and Wing Commander will, as a rule, be filled by permanent officers who have completed a tour of duty in a junior intelligence post, have qualified at the Staff College, and have again become due for service abroad.

PROMOTION AND RETIREMENT OF AIR COMMODORES AND GROUP CAPTAINS (GENERAL DUTIES BRANCH).—An Air Ministry Order (No. A.280/1932) states that the Air Council have had under consideration the means by which the policy laid down in paras. 9, 21 and 22 of A.M.O. A.426/28 regarding promotion and retirement in the ranks of Air Commodore and Group Captain in the general duties branch can most satisfactorily be carried into effect, and have decided that these matters should be regulated as stated below.

Air Commodores and Group Captains promoted on or after 1st July, 1933, will be selected from those who are of the following seniorities on the date of promotion :—

For promotion to Air Vice-Marshal : 2 to 4 years, inclusive as Air Commodore.

For promotion to Air Commodore : 2 to 4 years, inclusive, as Group Captain.

Officers who have not entered or have passed beyond the zone of their rank will not be considered for promotion. The Air Council, however, reserve to themselves the right to promote in exceptional circumstances an officer who is not within the zone of his rank.

The zones of promotion will be liable to alteration upwards or downwards from time to time. Before the introduction of the scheme, and before the reduction of the upper limit of a zone, the cases of all officers who would be excluded from further consideration by the operation of the zone will be reviewed by the promoting authority.

Owing to the relatively small establishments of the higher ranks, the numbers of promotions available to Air Vice-Marshal and Air Commodore will vary from time to time. In order that equitable consideration may be given to the claims of all officers, the promoting authority, when selecting officers for promotion, will review the names of all officers then in the zones in the light of the foreseen vacancies for promotion in the two coming years.

Promotion to the rank of Air Commodore will be made on the recommendation of a promotion board composed of the Chief of the Air Staff, the Air Member for Personnel, and the Air Member for Supply and Research.

Air Commodores and Group Captains who pass out of the zones of their ranks without being selected for promotion to higher rank will not normally be offered further employment after the date of passing out of the zone. Unless specifically informed to the contrary, therefore, they will understand that the appointment they hold on that date will be the last which will be made available to them, or, if not then holding an appointment, that they will not be further employed.

GROUP CAPTAINS (GENERAL DUTIES BRANCH) RETIRED PAY.—An Air Ministry Order (No. A.228/1932) states that the Air Council have had under consideration the scheme of retired pay of Group Captains of the general duties branch, and have concluded that, as the retirement policy applicable to these officers is similar to that applicable to Air Officers, the retired pay scheme for the rank should be similar to that for Air Officers. They have, therefore, decided that the retired pay of such Group Captains shall depend, not as in the past upon age and service, but upon rank and service as is the case with the retired pay of Air Officers.

The new scale will be £615 for twenty years service (calculated as laid down in para. 3561, K.R. & A.C.I.), increased by £15 for each additional year beyond twenty up to a maximum of £800. The minimum period of service qualifying for Group Captain's retired pay will be three years in the substantive rank on full pay; officers with less service as Group Captain will receive retired pay as if their service in the rank of Group Captain had been given in the rank of Wing Commander, unless the Air Council otherwise direct. The new scale will apply to all officers promoted to the rank of Group Captain after 25th August, 1932; Group Captains already serving will have the option of drawing retired pay either under the old or the new scale.

AIR PILOTAGE TRAINING.—An Air Ministry Order (No. A.233/1932) states that the Air Council have had under consideration the policy regarding training in air pilotage with a view on the one hand to raising the standard of knowledge in the Service, and, on the other, to eliminating so far as possible those difficulties explained in para. 1 of A.M.W.O. 676/30, regarding the passing of junior officers through short courses.

It has been decided in the first place that a substantially higher standard of training in air pilotage shall be set in *ab initio* flying courses at the R.A.F. College and flying training schools. To that end, flying instructors under training at the Central Flying School are being given instruction in air pilotage up to the standard indicated in the next paragraph.

Secondly, all flight commanders will be held responsible for continuing the air pilotage training given in *ab initio* flying courses when the pilots join their flights, and will be required to reach a sufficient standard in that subject to enable them to do so. To that end, all permanent and medium service officers who have not already taken an appropriate course will be required to pass a fourteen days course in air pilotage between their fourth and their sixth years of service.

Thirdly, to assist flight commanders in bombing squadrons to carry out the training mentioned in the preceding paragraph, each such squadron will carry, within its existing establishment of Flight Lieutenants, a Flight Lieutenant who, before appointment to the squadron has passed through a three months course in air pilotage or has qualified up to an equivalent standard.

The fourteen days' and three months' courses referred to above will, as a temporary measure, be conducted under arrangements made by the A.O.C.-in-C., Air Defence of Great Britain. It is contemplated that more permanent arrangements shall later be made for this training at an Inland Area unit. The Specialist

"N" Course and the Flying Boat Pilots' Course will continue to be held at the R.A.F. Base, Calshot.

Officers who have passed the Flying Boat Pilots' Course will be regarded as qualified up to the standard of the three months Air Pilotage Course; those who have passed the Flying Instructors' Course will be regarded as qualified up to the standard of the fourteen days Air Pilotage Course.

### Material.

Re-equipment.—The following re-equipment of units has recently taken place:—No. 6 (B) Squadron—Gordon from Bristol Fighter; No. 14 (B) Squadron—Gordon from III F G.P.; No. 35 (B) Squadron—Gordon from III F G.P.; No. 207 (B) Squadron—Gordon from III F G.P.; No. 13 (A.C.) Squadron—Audax from Atlas A/C.; No. 29 (F) Squadron—Bulldog from Siskin III A.

The undermentioned units will be re-equipped as shown during the next few months:—

No. 10 (B) Squadron—Virginia from Hinaidi; No. 56 (F) Squadron—Bulldog from Siskin III A; No. 100 (B) Squadron—Vildebeest from Horsley T.B.; R.A.F. College, Cranwell—Tutor from Avro 504 N; No. 402 Flight—Nimrod from Flycatcher; No. 404 Flight—Nimrod and Osprey from Flycatcher; No. 407 Flight—Osprey from Flycatcher; No. 409 Flight—Nimrod and Osprey.

Nomenclature of Aircraft.—The official name of the Saunders-Roe amphibian aircraft, hitherto known as the "Saro Cloud" is "Cloud."

The official name of the Westland P.V. 6—a development of the Westland "Wapiti"—is "Wallace." An order has been placed for the conversion of twelve "Wapitis" to "Wallaces."

The official name of Fairey III F. aircraft, fitted with Panther engines and supplied for use of the Fleet Air Arm, is "Seal."

## HOME COMMANDS

R.A.F. Staff College—Eleventh Course, 1933.—The dates and terms of the eleventh course at the R.A.F. Staff College are as follows:—

1st term—23rd January to 7th April.
2nd term—8th May to 4th August.
3rd term—25th September to 21st December.

No. 210 (F.B.) Squadron's Baltic Cruise.—Three "Southampton" flying boats of No. 210 (Flying Boat) Squadron carried out a cruise to the Baltic ports in September in connection with the British Exhibition held in Copenhagen. The Flight, under the command of Wing Commander Leckie, left Felixstowe on 5th September and after visiting Esbjerg, Bergen, Frondjhem, Stavanger, Kristiansand, Oslo and Crothenburg, reached Copenhagen on 24th September, the day of the opening of the Exhibition by H.R.H. the Prince of Wales.

The Flight remained at Copenhagen where it carried out local flights until 29th September when it flew to Esbjerg and on the following day reached Felixstowe on completion of the cruise. The total distance covered was approximately 2,800 miles.

New R.A.F. Station at Abingdon.—The advance party for station headquarters formed at Abingdon on 1st September, 1932. Station Headquarters was formed with effect from 8th October and from this date No. 40 (B) Squadron moved to Abingdon from Upper Heyford.

The Station Flight, Upper Heyford, will move to Abingdon with effect from 28th October, 1932.

MOVE OF NOS. 23 AND 32 (FIGHTER) SQUADRONS TO BIGGIN HILL.—Station Headquarters and Nos. 23 and 32 (Fighter) Squadrons moved from Kenley to Biggin Hill during the last two weeks of September to enable reconstruction work at the former station to be carried out.

MOVE OF 57 (BOMBER) SQUADRON TO UPPER HEYFORD.—No. 57 (Bomber) Squadron moved from Netheravon to Upper Heyford with effect from 5th September.

FLYING BOAT DEVELOPMENT FLIGHT—M.A.E.E. FELIXSTOWE.—The "Flying Boat Development Flight" was merged into "A" and "B" Flights of the Marine Aircraft Experimental Establishment, Felixstowe, with effect from 14th May.

ATTACHMENTS OF FOREIGN OFFICERS TO THE ROYAL AIR FORCE.—Engineer Lieutenant J. Yoshitake, of the Japanese Naval Air Service, has been attached to the Home Aircraft Depot, Henlow, to undergo the engineering course, lasting two years. Lieutenant K. Kondo, also of the Japanese Naval Air Service was attached to the Home Aircraft Depot in August, 1931, to undergo a similar course.

Lieutenant Commander Criemadis of the Greek Air Force, who was attached to the Air Armament School, Eastchurch, on 1st March, 1932, to undergo the armament course, lasting eleven months was, during the summer vacation at Eastchurch, attached to No. 2 Flying Training School, Digby, from the 2nd to the 27th August for a flying refresher course.

Lieutenant Vega Gracia, Mexican Air Force, is attached to the Royal Air Force from 15th September, 1932, for two months, in order to study the organization of and work carried out by fighter squadrons.

Lieutenant Vicomte de Spoelberch, Belgian Air Service, and Lieutenant Rasananda, Siamese Military Air Service, have joined the Central Flying School, Wittering, to undergo the Flying Instructors' Course which commenced on 20th September and terminates on 16th December.

Lieutenant James Y. Fu of the Chinese Military Forces, having completed his attachment to No. 5 Flying Training School, proceeded to the Electrical and Wireless School, Cranwell, on 1st October, 1932, for a course in signals.

## OVERSEAS COMMANDS

### EAST AFRICAN FLIGHT.

A report of the East African flight made in the early part of this year, has now been received and furnishes much interesting information. The following is a summary of some of the principal features :—

*Flying Conditions.*—Four Fairey III F. aircraft of No. 14 (B) Squadron, Amman, were engaged in the flight and flew an average distance each of over 18,200 miles They entered the area of heavy rains on more than one occasion and, whilst there is no doubt that the African thunderstorm can present a most forbidding appearance, yet apart from the dangers due to the clouds meeting the high ground, which are accentuated in East Africa by the fact that the maps are extremely unreliable, it was not found that the local weather conditions were in any way more severe than those experienced in other parts of the world by the Royal Air Force. The majority of the country flown over was thick bush or cedar forest, where not only would a crash be the inevitable result of a forced landing, but the personnel

involved would have some considerable trouble in making their way to civilization and the actual rescue work of injured personnel would be fraught with grave difficulties.

Very serious magnetic disturbances in certain areas had the effect in some cases of throwing out the compasses by as much as 32° variation, and were due, presumably, to the immense formations of ironstone, especially in the neighbourhood of the Great Rift Valley.

*Flights with local Administrative Officers.*—Every effort was made at each stopping place to take the local administrative officers and other government officials over the districts for which they were responsible. Some seventy-five of these officials were thus transported, and expressed themselves enthusiastically on the effect upon the native mentality of the formation flying of Service aircraft. In Tanganyika, especially, several of the senior officials stated that the natives were quite fixed in their opinion that the British had won the war in East Africa because of the N'dege (birds). They said that the natives were visibly impressed by the visit of the aircraft and that the flight had made matters considerably easier for them in their districts.

*Kenya.*—As a result of one flight over the coastal district of Mombasa a locust officer was enabled to get an adequate idea of the degree of infestation in his area, and in consequence was able to release two subordinate locust officers for work elsewhere where their services were urgently required. By no other means could he have surveyed the district which is chiefly waterless bush country. A distance of 550 miles was covered by this flight in 4 hrs. 40 mins.

A project had been mooted to construct a road from Kitui, which is some 80 miles East of Nairobi, to Malindi, which is the same distance North of Mombasa on the coast line. This route traverses a most inhospitable bush country and the possibilities of the route, lacking air reconnaissance, could only have been determined by running an expensive safari which would have taken months to inspect the route and locate water supplies. The Provincial Commissioner and the Public Works Committee Road Expert were flown across the area in question, arriving back at Nairobi the same evening. The reconnaissance showed the impracticability of constructing the road by this route owing to the lack of any water supply.

The Provincial Commissioner of the Masai Reserve and his District Commissioner from Narok, in consequence of a flight over the Masai Reserve, were enabled to locate in a clearance in the Mau Forest native squatters with herds of cattle, which in any event should not have been there and which were probably stolen. The information obtained on this flight enabled the local officials to put in train the necessary investigations.

The Provincial Commissioner at Eldoret was enabled, by means of a flight over the mountainous Marakwet area, to see that the project under consideration for the construction of a road round that district was impracticable. This official stated that only by many weeks of difficult personal safari and at considerable expense could he have obtained this necessary information.

One aircraft carrying the District Commissioner of Eldoret was despatched to demonstrate over a local meeting of Witch Doctors who had been giving a considerable amount of trouble. They were informed that many such aircraft were available when required for dealing with people who disobeyed the Government. This demonstration had a salutary effect.

At the request of the Governor of Kenya an air survey was undertaken of the north-eastern frontier of the Province. The frontier had been demarcated some years ago by an international commission, and during that survey a track many hundreds of miles in length was cut through the bush to mark it. The local Commissioner had requested a large sum of money for the purpose of recutting this track. The greater part of the expense involved in such operations would be on account of transport as the frontier runs for hundreds of miles through waterless and inhospitable bush. The Government of Kenya, unwilling to grant the necessary funds unless such a course was inevitable asked for an air reconnaissance to determine whether or not the track was still visible. The aircraft had no difficulty in following the track throughout most of its length, and established that only in one part, namely near the frontier part of Mandera, was it in a really bad condition.

In consequence of the reconnaissance the Government were placed in a position to postpone expenditure running into many thousands of pounds for at least some years.

*Tanganyika.*—The district on the slopes of Kilimanjaro was evincing considerable truculence with regard to the construction of a water furrow required for the service of the population lower down the mountain. A demonstration was made over the area affected, the Provincial and District Commissioners being carried in the aircraft. An immediate alteration in the temper of the district resulted and it was reported later that the construction of the water furrow was proceeding without further trouble. A demonstration was staged over a village near Tenga which had been giving trouble and it is understood that the effect of this demonstration was also satisfactory.

*Uganda.*—Information was received from the District Officer at M'Bale that he anticipated serious trouble in the district North of Mount Elgon owing to the infiltration of the cattle and herdsmen of a neighbouring tribe who were unable to find pasture in their own district. The local natives resented this intrusion, firstly because of the deprivation of pasture required for their own cattle, and secondly owing to the possibility of cattle diseases being spread amongst their own herds. Two aircraft were sent over the district on the same day, carrying the Provincial Commissioner, who was consequently enabled to form his own idea of the situation and to take immediate steps to deal with the matter.

During the whole cruise of over 18,000 miles, the flight was in only one case late, arriving at all other places on scheduled time.

*Landing Grounds.*—Photographs of every landing ground visited were taken. Generally speaking the landing grounds were in an exceptionally good condition, considering the state of aviation in this part of the world, which reflects great credit on the Governments concerned.

*Game.*—Practically every known type of game was seen from the air during the cruise and some interesting tests were carried out to illustrate the effect of aircraft on game at certain heights. Complaints had recently been made regarding the bad effect on game preserves of the low flying of airmen in East Africa. In consequence of the tests carried out the conclusion was reached that the stampede produced amongst game by aeroplanes flying comparatively high lasted longer than that caused by flying low. The tests served to dispel some ill-feeling which had been engendered in the Press on this subject in which the effect of flying on game had been grossly exaggerated.

*Co-operation with the Local Forces.*—An extensive programme of co-operation with the local forces in the various Territories was carried out during the cruise.

Demonstrations were given before the King's Own Rifles at Bombo, Nairobi, Dar-es-Salaam and Tabor and with the Kenya Defence Force at Nairobi and Mombasa. In other places, such as Zanzibar, where military forces were not resident, demonstrations and lectures were given to the local police.

Co-operation in most cases was carried out smoothly and with the greatest ease.

## IRAQ

*The R.A.F. Position in Iraq.*—A certain amount of misunderstanding seems to exist with regard to the position of the Royal Air Force in Iraq, now that the Treaty by which Iraq becomes an independent State and a Member of the League of Nations is in force. The actual position is that, although in September, 1932, Iraq became an independent State allied to Great Britain instead of a British Mandatory Sphere, the position of the Royal Air Force in Iraq remains the same for a further five years. The Squadrons will be stationed at the same aerodromes they occupy to-day and they will be maintained at their present strength.

At the end of five years the position will alter. One Flying Boat Squadron and one aeroplane Squadron will be maintained at Basrah, and any other units which the British Government wish to keep out there will be moved to a base West of the Euphrates, probably by Lake Habbaniya.

The present Treaty was signed in June, 1930, at Baghdad and is for twenty-five years' duration. The first British Minister to the court of Iraq is Sir Francis Humphrys, G.C.M.G., G.C.V.O., K.B.E., C.I.E. (Air Commodore, Reserve of Air Force Officers), who was formerly High Commissioner in Iraq.

Grant of Active Service Medal.—The following notice appeared in the *London Gazette* of 23rd September, 1932 :—

> "The King has been graciously pleased to grant permission to the British personnel engaged in the operations against Sheikh Mahmud in Southern Kurdistan in 1930 and 1931, including the Royal Air Force personnel and British officers serving with the Iraq Army or Iraq Levies, to accept and wear without restriction the Iraq Active Service Medal conferred upon them by His Majesty the King of Iraq for their part in those operations."

The qualifying period for the medal will be 29th October, 1930, to 11th May, 1931, and the qualifying area :—

> Kirkuk—Surdash—Junction of Qala Cholan and Little Zab rivers on Iraqi—Persian Frontier North of Mawit—thence along the frontier East and South to where it crosses the Khanaqin—Kermanshah road—Khanaqin—Kingerban—Kirkuk.

Individuals already in possession of the Iraq Active Service Medal will receive a clasp only.

The medals and clasps will not be inscribed with the names of the recipients.

# DOMINIONS.

## UNION OF SOUTH AFRICA

Owing to the misbehaviour and truculence of a rebel chief of the Ukuambi tribe, a request was received from the Administrator of the Mandated Territories for Union intervention. Three aeroplanes of the South African Air Force under Colonel Sir Pierre Van Ryneveld, Director of the South African Air Force, were

despatched to Windhoek. A demonstration failed to impress Ipumbu and an ultimatum was sent to him, after which the kraal was bombed and a number of cattle were killed. Armoured cars then arrived on the scene and the tribesmen accepted peace. Ipumbu had fled with his body guard.

## AVIATION IN FOREIGN COUNTRIES

### BELGIUM

By the end of the current year the fighting units of the Air Force will be completely re-equipped with the Fairey Firefly. Eventually the reconnaissance squadrons are to be equipped with the Fairey Fox in lieu of the now obsolete Breguet 19.

### BRAZIL

Amongst the new aircraft lately delivered to the Brazilian Government have been a number of Curtis-Wright Osprey two-seater biplanes and also five Waco T/240 military biplanes. Orders have been placed in the United States for fourteen Boeing single-seater fighters and twenty-three Voight Corsair reconnaissance aircraft, all equipped with Pratt and Whitney engines. In addition to the twenty-seven Moth trainers alluded to in the last JOURNAL, Brazil has now ordered another twenty-two de Haviland aircraft; twelve of these are Moth trainers for the navy, five are Tiger Moths and five Fox Moths. The latter are to be used for aerial photography and as air ambulances.

### CHINA

It is reported by what is regarded as a reliable source that an American Aviation Mission arrived at Shanghai during the Summer. Colonel John Jouett, formerly of the United States Army Air Corps, is stated to be in charge of the Mission which consists of fifteen members, most of whom were previously in the Army Air Corps in various capacities. It is understood that the Mission has gone to China at the request of the Chinese Government, by whom it is assumed to be official, although it is not formally recognized as such by the United States. Both the French and Italian Governments are understood to have offered to send official Aviation Missions to China, but their offers were not accepted.

### EGYPT

Squadron Leader Victor Hubert Tait, R.A.F., has been appointed to command the Egyptian Air Force with the rank of Kaimmakam (Lieutenant-Colonel) in the Egyptian Army.

### FRANCE

THE BUDGET.—Owing to repeated budget deficits and the possibility of a deficit of over 4,000 million francs on the current budget, the French Government have been compelled to pass a law authorizing cuts on the present budget, and economies to be effected on the 1933 budget. But there are no cuts on the current budget for Aeronautical Services.

Economies on the 1933 Air Budget amount to a total of 202 million francs as compared with the estimates for 1932—calculated on a basis of twelve months. This means that the 1933 Estimates must not be more than 2,232 million francs although the French Air Ministry recently estimated that the 1933 budget should show a very large increase over that for 1932.

NAVAL AIR BRANCH.—Trials are being carried out by the new aviation cruiser "Commandant Teste" with a trailing platform on to which seaplanes can taxi while the ship is under way, and from which they can then be lifted inboard. The platform consists of an expanse of canvas with a spreader boom on the under side, one end being attached to the stern of the ship and the other to a sort of drogue secured by towing lines. The drogue causes the water to roll in over the end of the canvas so that a seaplane can run up on to it. When not in use the canvas platform can be rolled up and stowed in the after part of the ship.

## GERMANY

GOVERNMENT ORDER.—The German Government have bought a Tiger Moth (Gipsy III) for training purposes. The aeroplane is fully equipped for instruction in blind flying.

DEVELOPMENTS WITHIN THE AIRCRAFT INDUSTRY.

*The Bayerische Flugzeugwerke A.G.* (*B.F.W.*), *Augsburg.*—After having been idle for over a year these Works have once again resumed aircraft construction on an order for the Deutscher Luft Hansa. This order was originally placed some time ago, but was subsequently withdrawn owing to certain objections on the part of the latter company to the types ordered. The withdrawal of the order, besides compelling the firm to go out of production, added considerably to their existing financial difficulties, and they have since been in a state of bankruptcy. The confirmation of this order from the Deutscher Luft Hansa and the prospect of an early and successful settlement of the firm's financial affairs (reported to have been arranged by compulsory agreement) will no doubt be of considerable assistance to the firm in their efforts to regain their former position in the German Aircraft Industry.

*The Junkers Flugzeugwerke A.G., Dessau.*—In the Spring of this year the main Junkers Works, of which the aircraft manufacturing company is a subsidiary, suspended payment and applied for a judicial composition with their creditors. Lack of working capital, and not bankruptcy in the usual sense of the term, made this step necessary.

According to a recent announcement in the German Press a project is under consideration for a credit to the Junkers Works from the mining concern of Henschel & Sohn A.G. of Cassel to be guaranteed by the State of Anhalt and the town of Dessau. In the meantime the Junkers Aircraft Works have re-opened, after having been closed down for a short time, but with a very reduced staff.

## ITALY

EXERCISES OVER ROME.—The air defences of Rome were tested during the night of 29th-30th September. A series of raids were made by aircraft of the Regia Aeronautica and the city was darkened by the substitution of blue bulbs for the ordinary electric lights where they were not extinguished altogether. The public appear to have responded obediently to the orders of the defence organization. The Red Cross, fire brigade and special corps for dealing with emergency fires, gas attacks and casualties all functioned with precision. Even the Vatican Palace, through the voluntary co-operation of the Pope, was included in the defence measures and darkened. Tram cars and other vehicles stopped on the alarm being given, and the occupants took shelter in the nearest doorways.

## JAPAN

THE SHANGHAI OPERATIONS.—The *Aeroplane* of 12th October last, publishes an account of the Japanese air operations during the fighting at Shanghai early this year which, as it says, although belated, is of interest.

More than half the operations were conducted by naval aircraft belonging to aircraft carriers.

In all, the Japanese Naval forces had seventy-four aircraft at their disposal. The "Kaga" carried forty-four ship-planes, the "Hosho" twenty ship-planes, and the "Notoro" ten seaplanes. The "Notoro" was anchored in the mouth of the Whangpu River, near Wusung, where there was plenty of water available for the operation of her seaplanes. The aeroplanes belonging to the "Kaga" and "Hosho" were later transferred to two adjacent aerodromes on the bank of the Whangpu River, half-way between Wusung and Shanghai, where they were constituted into an independent unit.

The Army's aeroplanes, totalling fifty-one, were also based on these aerodromes.

These aerodromes sufficed for all the air operations, although two emergency landing grounds had been prepared by the Army near Liuho and Nanziang, for possible future use.

The first Japanese naval aeroplanes to fly over the Shanghai district on 29th January were four reconnaissance seaplanes belonging to the seaplane-carrier "Notoro." On 2nd February the aircraft-carriers "Hosho" and "Kaga" arrived. Six shipboard fighters and four bombers from these ships immediately started attacking the Chinese lines, and aircraft from these ships continued their activities throughout the period of hostilities.

On 5th February four Chinese Voight Corsair biplanes were sighted over the Japanese lines, and on the receipt of a report, naval fighters left the carriers to attack. One Corsair was shot down. On the same day a Japanese reconnaissance seaplane was shot down from the ground near Shinnyo and the three occupants were killed.

On 22nd February the Japanese engaged a Chinese Boeing single-seat fighter and shot it down. This machine was piloted by an American named Robert Short, who was said to be the chief instructor of the Chinese Air Force. One Japanese observer was killed and one gunner injured in this fight.

On 26th February nine shipboard bombers and six fighters raided the Chinese aerodromes at Kokyo and Soshu and six Chinese aeroplanes were destroyed in their sheds. Three Chinese fighters were shot down in the air and two further machines were damaged by gun-fire on the ground. The Japanese lost one bomber, which was forced to land in the river owing to radiator trouble.

From 29th February to 3rd March Japanese naval aeroplanes dropped 394 large bombs and 1,010 small ones. During the same period 309 flights were made by fighting aeroplanes and 667 flights by bombing aeroplanes, representing a total flying time of 1,100 hours. Japanese losses included one fighter, two bombers which were forced to land, and one seaplane shot down in flames. Four flyers were killed and one was injured.

The Army Air Service did very effective work in co-operation with the land forces from 20th February onwards. On 21st February an Army fighter was forced to land by Chinese gun-fire near the Chinese lines at Shinnyo. As soon as he landed the Japanese pilot set fire to his machine and continued to fight the Chinese single-handed until he was killed, a typical example of the "Bushido" spirit which is common to all Japanese soldiers.

## PERSIA

The Persian Government having formed the nucleus of a Navy the units of which have been built in Italy, is now organizing an air force and an order has been placed in America for forty super-charged Pratt and Whitney Hornet engines, and Hamilton Standard metal air screws. It remains to be seen what type of aircraft are to be equipped with this machinery. It is also reported that an order stated to be worth £10,000 has been placed with a British firm for aircraft material

## PORTUGAL

Orders have been placed by the Navy Department for five Junkers K 43 single-engined seaplanes with the Flygindustri of Malmo, Sweden. This firm holds a licence to build military types of Junkers, the construction of which in Germany is forbidden. The seaplanes will be fitted with Armstrong-Siddeley Panther engines.

## SOVIET UNION

CIVIL AVIATION.—According to a Press report, by the Spring of 1932, 44,962 Km. of air lines had been established in the U.S.S.R. Since 1931, the length of the lines has been increased 53 per cent. These lines are divided as follows :—

16,591 Km. first class lines.
12,830 Km. second class lines.
12,747 Km. third class lines.

In addition, the Deruluft (German-Russian) Company operates 2,794 Km. of air routes.

Plans for the establishment of new lines during 1932 provide for an extension of 4,822 Km., including 1,890 Km. to be operated by seaplanes. The lines to be established are as follows :—

First class.—Moscow–Smolensk–Minsk and Penza–Saratov.

Second class.—Moscow–Briansk–Chernigov–Kiev ;
Baju–Krasnovodsk ;
Novosibirsk–Barnául–Semipalatinsk ;
Kazan–Ufa–Magnitogorsk ;
Krasnoyarsk–Yeneseisk–Turukhansk–Port Igarka.

At the end of 1932, the civil air services of the U.S.S.R. will, it is stated, be operating 49,784 Km. of air lines, which will give Soviet Russia the second position in the world as regards civil aviation, after the United States. The main lines will be reorganized this year. Multiple-engined passenger aeroplanes and fast mail aeroplanes will be put into service. The most important lines will then be :—

Moscow–Sverdlovsk–Novosibirsk–Irkutsk–Khabarovsk–Vladivostok ;
Moscow–Kharkov–Rostov–Baku–Tiflis ;
Moscow–Kharkov—Dniepropetrovsk.
Moscow–Leningrad ;
Moscow–Orenburg–Trashkent.

These will become first class airways, operated throughout the year by day and night.

The first five-year plan provided for the establishment of 45,893 Km. of air lines. At the end of this year, however, the total length of lines will be brought up to 49,784 Km.

Civil aviation is just beginning its second five-year plan; this, it is announced, is to increase tenfold the results of the first five-year plan.

## UNITED STATES

AIR SERVICES APPROPRIATIONS, 1932/33.—The financial situation in the United States is to some extent reflected in the final appropriations for the Army and Navy air services for the fiscal year 1933. The funds for both Services have been reduced by some $6,000,000 each below the figures for the previous financial year, the total appropriations now being $25,673,236 for the Army Air Corps and $25,382,820 for the Naval Air Service. In both cases there are large reductions in the amounts provided for new aircraft. It should be noted that these figures refer to "visible" appropriations only.

BOMBING AIRCRAFT.—A new bombing aircraft has been delivered to the Army Air Corps for test by the firm of Glenn Martin, which has up to the present been fully occupied in producing naval aircraft. The new bomber is a twin-engined low-wing monoplane, with retractable undercarriage. Performance figures have been withheld for the present.

THE "AKRON'S" AEROPLANES.—A Press report gives particulars of the first complete trials of the "Akron's" full complement of aeroplanes. The airship carries five Curtiss F9C-2 light single-seater biplanes in a hangar within the hull, 75 feet long by 60 feet wide, situated about one-third of the ship's length from the bow. The aeroplanes can be lowered, one at a time, through a "T" shaped opening in the bottom of the airship, normally covered by collapsible doors. Trapeze gear is used for releasing and hooking on in the air.

In the course of a flight across the United States and back, a hundred and four contacts between the aeroplanes and airship were made successfully. Six different pilots took part in the tests.

Earlier in the year, Admiral Moffet, Chief of the Bureau of Aeronautics, had left the "Akron" by aeroplane, while over the sea, and landed at a naval air base.

# REVIEWS OF BOOKS

## GENERAL

**Taking the Chair.** By Paymaster Captain H. P. W. G. Murray, D.S.O., R.N. (W. H. Barrell, Ltd., Portsmouth).

This useful little work is designed to assist those who may be called upon to preside at meetings, whether Service or not. It deals with the various duties which a chairman may be required to perform under such headings as Agenda, Procedure, Proposals or Motions, and Interrupted Debate. It also gives a Glossary of Terms in general use in connection with the conduct of meetings and drawing up minutes.

Officers of the fighting Services, both serving and retired, are almost certain to be called upon to " take the chair " sooner or later in life, and it is important that they should acquit themselves in that position with confidence and ability. Paymaster Captain Murray's concise treatise will be a help in both respects.

## NAVAL

**The Concise Story of the Dover Patrol.** By Admiral Sir R. H. Bacon, K.C.B., K.C.V.O., D.S.O. (Hutchinson & Co., Ltd.). 12s. 6d.

This is a condensed edition of the author's previous account of the work of the Dover Patrol from 1915 to the end of 1917, and as such it is welcome as being a more compact publication than the previous rather bulky volumes. Admiral Bacon has the pen of a ready and persuasive writer, and the reader may very easily find himself absorbed in the wealth of detail and close reasoning in this book to the exclusion of a clearer perspective of events in the light of present-day knowledge. Moreover, all through there runs a spirit of self-justification and of resentment of criticism from outside sources which seriously mars the account from the point of view of dispassionate history. Those who were closely associated with the work of the Patrol during those eventful years will see in this book the same unsympathetic attitude towards suggestions emanating from others which not infrequently resulted in delay in a new and perfectly sound course or invention being adopted, even if it was not ridiculed and turned down altogether. The effect was, often, to discourage juniors and, as we read, ultimately to bring about impossible relations between the local command and higher authority.

There are two main controversies in Admiral Bacon's record. The means employed to bar the Straits to enemy craft, especially submarines, and the methods adopted in the attempts to block Zeebrugge and Ostend. He describes in great detail the almost superhuman efforts of Captain Frederick Bird, R.N., and his hardy crews in the drifters to lay net barrages, and pays a well-deserved tribute to

them for their tireless labours in the face of most arduous and often dangerous adversities. It is a story of which any commander might well be proud; yet the fact remains not only that the whole conception of wire and net barrages as a means of stopping enemy craft in the channel was futile but that it was persisted in when it was known to be futile, with the result that for over long the country and the Admiralty continued to pin their faith to a system which was so ineffective that it came within an ace of losing the war. It would be unfair to hold Admiral Bacon to blame for this failure, which he, now, largely admits. He may well contend, as he does at great length in his book, that he was doing a very good best with very poor materials, and that it was easy for others to come along when good materials were available and reap where he had sown. But that is not the whole story. The Admiralty Barrage Committee, the appointment and recommendations of which he resents so deeply, was only created because the situation had become desperate and, up to that time, neither the efforts of the Dover Patrol to deny the passage of the Straits to enemy submarines and surface torpedo craft, nor the proposals for future action by its commander gave assurance that the position would be put right in time to prevent disaster. New ideas and new enterprise were obviously called for. Had they been welcomed and treated in a spirit of co-operation there might have been less reason for a change of command.

Credit for originating the idea of an attack on Zeebrugge is as difficult to assign as is that for the production of the tank. Admirals Lewis Bayley and Reginald Tyrwhitt were certainly early in the field. Admiral Jellicoe himself gave much time and thought to the project. It was natural that the Admiral at Dover should have made a very special study of an operation which he might have been called upon to conduct. Admiral Bacon takes up many pages in an endeavour to show how much better his scheme would have been than that which was carried out. He criticises the attempt to close the exit from Zeebrugge lock by blockships, instead of by destroying the lock-gates with gun-fire at almost point blank range; he considers it was wrong to try and place a ship alongside the outer wall of the mole and prefers his proposal to ram the wall with a monitor fitted with a false bow; he argues that the landing party suffered undue losses because it was provided with narrow and fragile brows instead of the huge broad hinged platform of his design. "The mole landing was a failure . . . the blocking . . . useless." He is scathing in his condemnation of the lack of proper means to ensure finding the entrance to the harbour at Ostend.

There is scarcely any naval operation which would not have been carried out more effectively if it could be tried out first as an experiment and modified in the light of experience. Admiral Bacon makes a great point of "experience," but neither he nor anyone who actually took part in the Zeebrugge—Ostend operations had any experience of this particular form of attack under modern conditions. His scheme for ramming the mole and destroying the lock gates by gun fire from monitors on the weather side of it did not commend itself to many who were no less good seamen and expert artillerists, and it will always remain a matter for argument whether it would have succeeded as well as or better than what was actually done.

This book should be read, if only as an instructive account of the multifarious projects it describes and as a testimony to the ingenuity of the author. But it should not be accepted at face value, or the point will be missed that very many of these projects and much of the ingenuity bore no fruit. This was, often enough, due to the chances of war; nevertheless one cannot avoid the impression it leaves that to some it is given to invent, to plan and to scheme, and to others to act, to command, and to lead.

## ARMY

**Eyewitness.** By Major-General Sir Ernest D. Swinton, K.B.E. (Hodder & Stoughton). 25s. 0d.

General Swinton is probably best known as the author of those remarkable stories that were published under the title of " The Green Curve." In this present book of personal memories the same vivid touch as in the previous tales is employed to recount the author's part in the production of that engine of war that came to be known as the tank; and a striking and most readable volume it is. Beginning his work in France as the only and official War correspondent with the B.E.F., Colonel Swinton soon appreciated the fact that no progress would ever be achieved by mere infantry assault in trench warfare as long as the enemy's barbed wire and machine guns were not destroyed. From this conviction, combined with a slight knowledge of the Holt caterpillar tractor, was evolved the idea of the " machine gun destroyer " or tank.

Coming home from his work in the field, Colonel Swinton found himself installed once more in his pre-war position on the Committee of Imperial Defence. There he found an unequalled opportunity of setting forth before the highest authorities his views as to the machine he had in his mind. Even so, he made but slow progress, and had it not been for the fact that Mr. Winston Churchill, then First Lord of the Admiralty, was working out an analogous idea, he might have failed. But the convergence of these two conceptions, and still more the Admiralty's Committee, set up by Mr. Churchill, to work out plans for the construction of " Landships," all helped to bring Colonel Swinton's idea to fruition. Once the plan was handed over to the Ministry of Munitions, Colonel Swinton was entrusted with the task of elaborating plans, establishments and all the necessary details for placing in the field a number of tank units. As soon as production of the machines was assured a special area at Elveden, near Thetford in Suffolk, was set aside for the training of the crews for the machines. On 16th September, 1916, they took part in their first engagement in France. The rest of the story of the tanks must be familiar to all officers and there is little need to analyse the book further.

The delays, and passive resistance also, which the tanks received during their period of incubation almost baffles belief. Colonel Swinton may be congratulated on his perseverance, without which the machines could scarcely have come into being—still less the units.

The narrative is written in a lively manner and is easy reading. Here and there the author obviously has difficulty in keeping in check a fluent and caustic pen, but such small lapses of this nature as may be detected are pardonable. The facts are strong enough to speak for themselves without being enforced by pointed remarks. Nevertheless it is not perhaps without some slight afterthought that the following anecdote is given special emphasis. At Elveden, Colonel Swinton worked with a particularly enterprising and efficient civilian surveyor in the planning of his new tank ground. He recommended the man never to take a commission, for if he did he would become a mere cipher and find himself obliged to take orders from those whose technical superior he was. Later on Colonel Swinton met his friend again—this time in uniform; but as he puts it, the once forceful and efficient personality, like Samson shorn of his locks, had lost the power that had been the mainspring of his efficiency. Neither can it be altogether an original mind that caused the frontispiece to depict General Swinton not in the uniform of his rank but under the shadow of a billycock hat.

**Passing it on.** By General Sir Andrew Skeen, K.C.B., K.C.I.E., C.M.G. (Gale & Polden). 5s. 0d.

This collection of " Short Talks on Tribal Fighting on the North-West Frontier " is a valuable little volume in which that well-known officer, Sir Andrew Skeen, passes on " the wise teaching of his seniors." As frontier fighting depends on the difficulties of nature as much as on the peculiarities of the frontiersman, it changes but very slowly, and the craft of frontier fighting is much the same as it was thirty years ago, when smokeless powder came into use.

The book covers every form of frontier operation and visualizes each one in considerable detail. As frontier fighting is made up of trifles and exacts scrupulous attention to detail for success, this is important; but the reader, to obtain full benefit from its study, must weigh with care every line that he will read in its pages, for it is the concentrated essence of this type of war coming from an officer with great experience of his subject, backed by a reputation deservedly acquired in the very difficult Waziristan operations of 1919-20. The book is particularly intended for study by the junior officer of infantry " of the British Service in particular as he is less likely in his wider range of service to be trained for the local problem which all officers in India have to keep in mind." But it applies also to every officer who may be called upon to participate in frontier fighting.

The book might have been improved by explanatory diagrams, for the uninitiated may find it more difficult to follow the reasoning than those who possess a first-hand acquaintance with India. On the other hand, there is nothing lacking in the admirable detail given as to the organization and care of transport in these operations. General Skeen is more than right in laying particular stress on this aspect of a frontier expedition. The whole tone of the book, moreover, will appeal even to the most hard-headed soldier who will unquestionably put it down with the feeling that here is one volume at least which will be of sterling utility to the most practical and least bookishly-minded member of his mess.

**The Elements of Rifle Shooting.** Dealing with the Service Rifle and Open Sight. By J. A. Barlow. (Gale & Polden, Ltd.). 5s. 0d.

This is quite a good and useful book which treats of rifle shooting wholly from the competition and match shooting point of view; it is not intended for the instruction of recruits nor for any similar purpose. The illustrations and diagrams are practical. The hints on choosing and testing a rifle seem to be appropriate. We would, however, point out that the writer, contrary to Army practice, states that *cold* water may be employed for cleaning the rifle after firing. Again, in treating of the essentials of holding, aiming and trigger pressing, he considers that holding is the most important item and believes that the service manuals do not sufficiently emphasize this point. Regarded from the purely technical standpoint the book can be recommended with confidence to all who are interested in target shooting.

**A Guide to Courts-Martial Procedure.** By Captain L. J. J. Pullar, M.C. (Sifton Praed & Co.). 4s. 0d.

This little book should appeal to all officers since it is more of a guide to members of Courts-Martial than intended to be a short cut to success in examination. The book is almost entirely printed in the form of the actual Court-Martial

stationery with the notes and hints inserted at the actual points where they are needed. The entire procedure of dealing with a "crime" from the commission of the offence to the assessment of punishment by Court-Martial is followed.

It is a thoroughly practical little volume.

**A Study of the Strategy and Tactics of the East Prussian Campaign 1914.** By Lieutenant-Colonel A. Kearsey, D.S.O., O.B.E., *p.s.c.* (Sifton Praed & Co.). 3s. 0d.

Although this is a second edition of an existing book, it may be regarded almost as a new work, having been entirely re-written. It is, however, disappointing to find on the opening page such misprints as Hindenberg, while Tannenburg is spelt as such throughout. The text follows General Ironside's well-known work. It is a readable and satisfactory guide to the campaign, and is illustrated by F.S.R. throughout. But like all Colonel Kearsey's books it needs to be supplemented by some more extensive reading. It should go particularly well as a "guide" through the picturesque chapters of Mr. Winston Churchill's "Eastern Front" (Vol. 5 of "The World Crisis.")

**Les Carnets de Galliéni. Publiés par son fils Gaétan Galliéni.** Notes de P. B. Gheusi. (Editions Albin Michel). 15 francs.

During the years 1914, 1915 and 1916 until he went into a nursing home on the 12th March to die two months later, Maréchal Galliéni kept a rough diary. This his son has now seen fit to publish, abbreviating the portion from 12th September, 1914, to the 28th October, 1915, that is, between the Battle of the Marne and the date of the Maréchal becoming Minister of War, during which time he was still Military Governor of Paris and his diary presents little of general interest. Unfortunately the entries for the critical days, 4th—9th September, 1914, are extremely brief and without importance; but the Maréchal preserved "various official documents, orders, instructions, notes and minutes" from which he at some subsequent date compiled the account of his action before and during the Battle of the Marne, which was published in his Memoirs; to fill the gap this account is reprinted from the original MS. Thus the "Carnets" throw no fresh light on the genesis of the battle. The later entries in the diary, however, make it clear that Galliéni fully realised the efforts of Maréchal Joffre's staff to reduce the importance of his share in the victory, of which he himself was fully convinced. Thus, under the date of 30th April, 1916, he writes: "The more I study the question of the Battle of the Marne, the clearer do I see into that 4th September. Nothing would have been done if I had not insisted with G.Q.G. and with French. To put it shortly, I started and the others followed me."

The entries during the period in which he was Minister of War show considerable contempt for the members of the Cabinet, who, as the Maréchal frequently repeats "let off floods of words but never gave a decision."

**Les Fronts de Combat.** By Général Brossé. (Paris: Berger-Levrault).

This is an enquiry into the question of how much front should be allotted to a division, as a multiple of battalions, under various conditions in defence and attack. With the new French F.M. 24 (*fusil-mitrailleur* – light machine gun) the author thinks that it will be possible to cover longer fronts than in 1914-18. But he points out how successful defence depends mainly on the number of guns per

section and successful offence on the weight of guns or tanks available to make a breach. The pamphlet is intended to provoke thought rather than to lay down rules.

**Réflexions sur la Fortification permanente.** By Lieutenant-Colonel Lobligeois (Paris: Berger-Levrault). 25 francs.

This is an enquiry into the reasons which have led to the various forms adopted in fortifications from the earliest times to the present, in the trace, on different kinds of ground, obstacles, and the protection of personnel and armament. It concludes with some views on concrete, pumping water by compressed air, fire against tanks (naval methods of fire are suggested), demolitions, and the repair of wire entanglements damaged by fire. To obtain the latter result the author suggests a special low velocity shell with wire coiled up inside it; on burst the base drops out and holds one end of the wire, whilst the body of the shell goes on and lays the wire.

**L'Artillerie dans l'Offensive en Guerre de Position.** By Colonel G. Bruchmüller. Translated from the German. (Paris: Berger-Leveraut). 35 francs.

This translation of the important German work of Colonel Bruchmüller, which first appeared in 1927, should be welcome to students of artillery tactics who read French but not German. There is no need to repeat what was written of it when the book was first published. It deals successively with the method of supporting the attack of a division, an army corps, an army and a group of armies. The examples deal mostly with the Eastern Front, where Bruchmüller was active, but the final chapters treat of his participation in and command of the German artillery during the battles of March, 1918. The translation is clear and easy to follow.

## AIR

**The Air Annual of the British Empire, 1932-33.** Edited by Squadron Leader C. G. Burge. (Gale & Polden). 21s. 0d.

The "Air Annual of the British Empire" appears this year in a slightly modified form. The French and Spanish sections, which were introduced for the first time last year, have not been included in this English edition, which is designed primarily for readers at home and in the Dominions. The French and Spanish sections are still included in the edition intended for foreign subscribers. Another important feature is that purchasers of the 1932-3 volume may obtain free of charge from the publishers, a combined index covering all the volumes that have been issued, and therefore enabling rapid reference to be made to the aeronautical events of the last four years. This index will enhance the value of the book.

There is further detail improvement upon previous issues and the volume under review appears to be directed with a clearer idea of its precise function among works on aviation, while the standard of reproduction and the quality of the special articles remains on the high level that was set by the first number. Among the statistics given a somewhat disturbing fact is revealed; and that is that the percentage of passengers carried in British aircraft between Great Britain and the Continent is decreasing rapidly, having fallen a further 4 per cent. in 1931. There is also a decrease in the British share of mail and freight carrying.

The reason for this increasing popularity of foreign air transport companies is a matter which demands investigation. The British monopoly company has secured, in its new four-engined biplanes, machines which offer more comfortable travel than any others at present in existence. So that the falling off in the percentage of air passengers carried by the British line must be attributed to some other reason. It is time that the Civil Aviation Department of the Air Ministry made some attempt to discover what that reason is.

Many interesting special articles are included in this issue, among them one by Major G. P. Bulman on the progress of British aero-engines in which the full story of how the racing engines were prepared for the Schneider Trophy contest of 1931 is told. Altogether this year's volume will prove of great value to those interested in British Aviation.

## REGIMENTAL HISTORIES

**Historical Record of the 14th (King's) Hussars, 1900-1922.** By Brigadier J. Gilbert Browne, C.M.G., C.B.E., D.S.O.; and Lieut.-Colonel E. J. Bridges, M.C. Edited by Major J. A. T. Miller, O.B.E. Volume II. (Royal United Service Institution). £2 2s. 0d.

The second volume of this history covers the South African War and the Great War. Some two-fifths of the book are devoted to the former campaign, in which the 14th Hussars were engaged from January, 1900, when they were despatched to Natal until the end of the war. Being stationed in India in 1914, they spent the whole period of the Great War in Mesopotamia, forming part of the 6th Cavalry Brigade and fighting in almost every action of that campaign.

The volume contains a few clear battle plans and numerous photographs.

**The History of the 15th (King's) Hussars, 1914-1922.** By Lord Carnock, M.C. (Gloucester: The Crypt House Press).

The 15th Hussars on return from foreign service in 1912 were allotted to the duty of Divisional Cavalry with the first three divisions of the B.E.F. Not until 1915 was it united as a regiment. The early history of the Regiment has little unity but is very full of interest. For the rest of the War the history of the regiment is similar to that of the cavalry as a whole, except where interrupted by spells of duty in the trenches. It is a thoroughly well told story; it is illustrated with contemporary pencil sketches and has a few skeleton maps.

**The Annuals of the King's Royal Rifle Corps.** By Major-General Sir Stewart Hare, K.C.M.G., C.B. Volume V. "The Great War." (John Murray Ltd.). 25s. 0d.

This admirably produced history deals with the activities of all the battalions of the K.R.R.C. during the entire War. It deals with the campaigns as one continuous whole, and the actions of the various battalions are related in the order in which they occurred. This treatment presents many advantages, but the volume of the matter is such that the history can only touch upon the various incidents of the campaign, and cannot relate many individual performances. In view of the number of battalions which the K.R.R.C. maintained in the field, it could not be otherwise. Within that compass it is a noteworthy history.

The maps are relegated to the end; they are purely topographical and do not show troop distributions.

**The Fourth Battalion (Duke of Connaught's Own) 10th Baluch Regiment in the Great War.** (129th D.C.O. Baluchis). By W. S. Thatcher. (Cambridge University Press). 10s. 6d.

This battalion, more familiar perhaps as the 129th Baluchis, had a very full experience of fighting during the Great War. In October, 1914, it fought with the 2nd Cavalry Division in the Ypres Salient. After rejoining the Lahore Division it participated in the Battle of Neuve Chapelle, after which it returned to the Salient. Then it was despatched to East Africa where it was engaged in much arduous marching interspersed with some bitter fighting until the close of the campaign in November, 1917. It returned to India after the Armistice.

The chapters dealing with the East African campaign offer much fresh reading and are admirably supplied with maps.

**The Iraq Levies (1915-1932).** By Brigadier J. Gilbert Browne, C.M.G., C.B.E., D.S.O. (Royal United Service Institution). 6s. od.

This volume, though in appearance and name a Regimental History, might almost have been made something more. It gives in detail the story of the raising of the Levies and traces their activities since that date. These Levies should not be confounded with the regular Iraqi troops. During the past few years the Levies, consisting of Assyrians, have been somewhat reduced, while the remainder were turned over to the Royal Air Force as "defence troops."

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